

TOWARDS A HEALTHIER ECONOMY: WHY INVESTING IN SUSTAINABLE TRANSPORT MAKES ECONOMIC SENSE

Jolin Warren
Transform Scotland

1. INTRODUCTION

1.1. Understanding Investment in Active Travel

The Scottish Government is committed to increasing the use of walking and cycling – ‘active travel’ – as transport modes. Their aim is that, “by 2020, 10% of all journeys taken in Scotland will be by bike.”¹ Some of the local authorities in Scotland also have ambitions for cycling. For instance, the City of Edinburgh Council signed up to the Charter of Brussels in 2009, committing it to achieving a cycling rate of 15% by 2020.²



National and local aims for walking are less clear or specific, despite the fact that walking is the most important mode of all, as it forms the basis for all transport journeys. Around one in four journeys that we make are on foot, and walking is the most common travel mode for people under 20 and over 80.³ It is the most inclusive, affordable and environmentally-friendly mode of transport. Walking also stands at the very top of the Scottish Government’s transport hierarchy. However, it is worth noting that while the National Transport Strategy⁴ acknowledges the need to further promote walking as a sustainable means of transport, there are no concrete targets with regards to achieving a greater mode share of walking.⁵

There is a growing recognition that increasing active travel rates would help with several issues facing the country: environmental obligations under the Climate Change (Scotland) Act, the rising incidence of obesity, workplace stress and absenteeism, increasing road congestion, and local air quality to name a few. Increasing active travel rates should be possible in Scotland, as it is now understood that the high levels of cycling in European cities have resulted from investment, not due to a difference in culture, topography, or climate. As the former transport minister, Lord Adonis, said in a September 2009 speech, “our continental neighbours don’t cycle more because somehow it’s in their genes, but because it’s safe and supported.”⁶ Indeed, UK cycling levels were around 15% in the 1950s,⁷ higher than Germany’s current 9% cycling mode share.⁸ Somewhere in the last few decades, Scotland failed to retain a decent level of cycling.

Recent evidence to the Scottish Parliament’s Transport, Infrastructure and Climate Change (TICC) committee also showed that while perceived safety is a significant issue, weather and hilly terrain are not barriers to cycling. “Plenty of continental Europe is as hilly as Scotland and has a lot of cycling. I reiterate that [barriers to cycling such as the weather and hills] are perceptual and can be dissolved by other means.”⁹ The Parliament’s TICC committee

subsequently concluded in their report that, “active travel has huge potential to benefit the health of the people of Scotland as well as contributing to meeting Scotland’s ambitious climate change targets.” But they warned that this won’t be achieved without “ambitious increases in resources” and “stronger, more effective and sustained leadership” from the Scottish Government.¹⁰ So, clearly, there is a growing commitment in Scotland to increasing active travel rates.

To date, excellent work has been done to understand the technical measures taken, the components of best practice transport policy, and the interactions between different levels of government in European cities with high levels of active travel. In particular, the Scottish Government commissioned research that resulted in the 2003 report *Transferability of Best Practice in Transport Policy Delivery*, published by their Transport Research Group. But while we have a good understanding of the types of measures that would likely result in an increase in the use of active travel modes, use of these modes – particularly cycling – in Scottish cities (see *Section 1.3* below) remains far too low if meaningful targets for 2020 and beyond are to be met. The average Scottish resident travels by car for 39% of journeys under two miles and more than half of journeys under five miles.¹¹

This report therefore seeks to understand the social and political conditions that led to the development and implementation of best practice active travel solutions in European cities. Rates of cycling in these cities reach as high as 38%, and walking rates are also generally higher than those of Scottish cities. By understanding the environment that led to active travel investment in other cities, it will be possible to draw out any lessons for Scotland. This report will not look in detail at the technical or policy measures that can be taken to improve active travel rates. Instead, the focus is on how governments, local and national, can be encouraged to put such measures in place.

When choosing cities for this study, the two key factors were:

- (1) Is the city of similar size and with similar characteristics to one of Scotland’s cities?
- (2) Has the city experienced an increase in active travel rates?

Studying all European cities that meet these criteria was neither necessary or possible, so a sample of 13 cities were chosen that cover a variety of countries, sizes, and geographies. The research was primarily carried out through telephone interviews with contacts in the cities, and unless otherwise noted below the source of information is these interviews. Further details on the research method, including the interviewees and questions asked is available in the report on Transform Scotland’s website.¹²

1.2. Conventions Used in This Report

Definitions

Cycle lane	An on-road cycle lane
Cycle path	A segregated or off-road cycle track
Metropolitan Area or MA	Including areas generally considered to be part of a city but outside its local authority boundaries

Cycling and Walking Rates

There is no standard method for collecting cycling and walking rates, so they are not always suitable for precise comparison. However, they are useful as a relative indicator of active travel activity. In this report, 'cycling rate' and 'walking rate' are used to describe modal share of the respective transport methods. They have been provided by interviewees (unless another source is noted).

Exchange Rates

Exchange rates were taken as an average over the first calendar quarter of 2010 (1 January to 31 March). The converted amount is rounded to the nearest sensible unit, depending on the context it is used in.

British pound GBP (£)	Swiss franc CHF (Fr)	Danish krone DKK (Kr)	Euro EUR (€)	Swed. krona SEK (Kr)
1.00000	1.65033	8.39203	1.12730	11.23724

source: Oanda <<http://www.oanda.com>>

1.3. Overview of Scottish Cities

The following table lists some key figures for Scotland's official cities. This will help to provide some context to the information given for the European cities in this study (see *Section 2*).

City	Population (city / MA)	Population density (city, people/hectare)	Cycling rate	Walking rate
Glasgow	581,320 / 1,184,350	32.93	2%	14%
Edinburgh	454,280 / 476,660	17.01	6%	20%
Aberdeen	183,030 / 195,530	31.13	4%	14%
Dundee	142,070 / 152,320	24.35	2%	19%
Inverness	44,220 / 56,660	0.08 (council area) ¹³	2% (council area) ¹³	19% (council area) ¹³
Stirling	33,710 / 45,750	0.39 (council area) ¹³	2% (council area) ¹³	10% (council area) ¹³

sources: GRO Scotland, *Mid-2008 Population Estimates for Settlements and Localities in Scotland*; GRO Scotland, *Scottish Settlements Urban and Rural Areas in Scotland*; Scottish Government, *SHS Transport: Local Area Analysis 2007/08*

2. ACTIVE TRAVEL INVESTMENT IN EUROPEAN CITIES

2.1. Basel, Switzerland



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Photo by Maya Lucchitta – <http://flic.kr/p/7eF94>

2.1.1. Overview of Basel

Population: **167,763** (city) / **189,556** (MA) people¹⁴

Population density: **70.3** (city) / **51.3** (MA) people per hectare¹⁵

Cycling rate: **21%**

Years of cycling-specific investment: **22 years**

Walking rate: **28%**

Years of walking-specific investment: **5 years**

The city of Basel is located in the northwestern region of Switzerland, on the upper Rhine, bordering France to the west and Germany to the north. It is approximately 244 metres above sea level, the lowest of all Swiss cities north of the Alps.¹⁶ The city occupies an area of 2,386 hectares, with the larger urban zone spreading over 3,696 hectares¹⁵. While the population of 15–39 year olds is equal to that of 40–64 year olds, at 34% each, those under 20 years old make up 17.2% of the population.¹⁷ The main industries associated with Basel are pharmaceuticals, chemicals, and biotech. It is a transport hub with trains and stations run by the French and German national operators, as well as the Swiss national rail company.¹⁸ The buses and trams also link up with international destinations in the wider tri-national region.¹⁹ In 2009, Basel saw 1,804 hours of sun, 818mm of precipitation, and an average temperature of 11°C.²⁰

2.1.2. Active Travel Solutions in Basel

Since 1988, Basel has had a budget for investing in cycling improvements, and now almost as many journeys are taken by bicycle (21%) as by car (23%). Public transport accounts for 27% of journeys and some of the cycling investment has been used to provide a large cycle parking facility at the main train station. Aside from cycle parking, the main focus of investment has been to install cycle lanes on many streets as well as some cycle paths where appropriate. There has also been the widespread creation of 30km/h (19mph)

zones to slow down motorised traffic. The canton of Basel-Stadt does coordinate with neighbouring cantons to ensure that cycle paths join up, but there is no larger programme of cooperation on cycle investment amongst the cantons.

Five years ago, the city also started investing specifically in improving conditions for pedestrians. To date this has mainly focused on safety with the creation of safe road crossings across the city. But Basel is also starting to create more pedestrianised areas. Walking is already the most popular form of transport, accounting for 28% of journeys.

2.1.3. Key Investment Decisions in Basel

In 1988, the cycle campaigning group IG Velo (now Pro Velo) started a campaign for cycle funding in Basel. The parliament of the Basel-Stadt canton (which comprises the city and the neighbouring towns of Riehen and Bettingen) decided this was a good idea and that funding could be put in place without a referendum. A budget for cycle improvements was therefore allocated and has been present ever since. In Basel, it is apparently not difficult to convince politicians of the importance of cycling, as people from all sides of politics (eg. left, conservative, green) cycle and support cycling. Even before the investment that started in 1988, there was wide usage of cycling amongst the population. A Basel politician once said that parliament never says no to anything for cyclists.

The systematic investment in walking improvements is a more recent development. Around five years ago, politicians decided that it would be useful to have a budget to promote walking. This was based on the effectiveness of the budget for cycling.

Demand or leadership? Popular demand led to a turning point in cycling investment, though this met little resistance from the politicians. Investment in active travel continues to be supported by the general public.

2.2. Bremen, Germany



Photo by Thorsten Pohl – <http://en.wikipedia.org/wiki/File:Schnoor.JPG>

Photo courtesy of Sustrans

2.2.1. Overview of Bremen

Population: **546,038** people²¹

Population density: **16.78** people per hectare²¹

Cycling rate: **25%**

Years of cycling-specific investment: **always / 8 years** (stronger focus)

Walking rate: **20%**

Years of walking-specific investment: **7 years**

The city of Bremen occupies 32,542 hectares on the lower Weser river in northern Germany, and with the enclave of Bremerhaven forms the smallest federal state (also called Bremen) in the country.^{21 22} The historic town hall has been a UNESCO World Heritage Site since 2004,²³ and Bremen has a compact city centre with magnificent architecture and medieval lanes. As it is close to the North Sea, the port and harbour are key features of the city, and Bremen's industry historically featured shipbuilding and food production (including the Beck's brewery). These days the city also boasts a strong manufacturing and science and technology (including aerospace) industry.²²
²⁴ Only 27% of the population are between 20–40 years old, with those from 40–60 years making up 29%.²⁵

2.2.2. Active Travel Solutions in Bremen

In Bremen, consideration of the needs of cyclists is part of the standard process of designing road infrastructure. As such, there is a history of cycle-friendly road building in Bremen. During the 1970s and 1980s, separate cycling/walking paths were also built alongside roads, even in dense residential areas. From this period there is a heritage of approximately 100km (62mi) of paths that are difficult to use because they were cobbled or now have trees with roots that have broken up the surface. In more recent years, the preference has been to build cycling infrastructure on the road (*ie.* cycle lanes) instead of as separate paths.

Bremen has also created many 30km/h (19mph) zones, with 70% of the city

now covered. There is a focus on mixed use developments so that journeys can be shorter and more convenient for walking and cycling. Information campaigns supporting cycling have also been run to encourage an increase in usage.

The provision of cycle parking has also been a major focus. There are now over 4,000 spaces in the city and in residential areas, cycle parking has partly replaced car parking spaces. Some car parking garages also have bicycle spaces on the ground floor. And next to the main train station there is a 1,500-space cycle parking garage, accessed by an automatic system, and a bicycle shop to make it easy for bikes to be repaired.

With regards to walking, the city of Bremen developed a plan called GreenNet which focuses on providing a city-wide pedestrian network. GreenNet seeks to link existing walking routes and facilities by providing convenient and short connections for pedestrians. Where possible, these are built away from the road network, prioritising paths, parks, and other green spaces. Work is also being done to increase pedestrianised areas.

It is difficult to put a figure on the level of annual investment in active travel in Bremen, as many improvements are carried out as part of the normal planning and road repair works. However, spending on active travel is estimated to be in the region of €800,000–€1,200,000+ (£700,000–£1,100,000) per year. The majority of this funding comes from the city itself, though the trunk road network is also financed by the German federal government. This investment includes facilities for all users, and so contributes to active travel facilities. The federal government also provides national planning advice on zoning residential areas with lowered speed limits to make cycling on road more attractive and safer.

2.2.3. Key Investment Decisions in Bremen

As mentioned above, planning and designing for cyclists has always been part of the normal road infrastructure budgeting process in Bremen. There is a history of public and political awareness of cycling as a type of transportation that has its own needs and facilities. Even during the 1960s when there was major road construction (including an elevated road) and destruction of old parts of the town, there was still investment in cycling infrastructure.

As an interviewee said, in Bremen there is a “notion of cycling belonging to everyday culture.” It has always been a piece of mobility for everyone – cycling never lost prestige or became the poor person’s form of transport. Bremen is also completely flat, which helps with the ease of cycling. However, in the last eight years there has been a stronger focus on cycling and Bremen now has a goal of a 30% cycle rate in 5–10 years.

Pedestrians’ needs were not always as well recognised, but in the 1980s there was urban development on the Weser river. This was an area that had long been neglected, but the plans in the development led to an increased awareness of pedestrians’ needs. Since then, there have been separate pedestrian plans in various areas. The GreenNet plans build on these existing plans.

Demand or leadership?

In Bremen investment in cycling has always been part of 'business as usual.' The GreenNet plan that focuses on improving the pedestrian network is led by the city government, but the importance and building of pedestrian links seems to have been an emergent trend.

2.3. Brighton & Hove, England



Photo by Gregory Williams – <http://flic.kr/p/3BAp4T>



Photo by Elsie esq – <http://flic.kr/p/5pUxwt>

2.3.1. Overview of Brighton & Hove

Population: **256,600** people²⁶

Population density: **29.98** people per hectare²⁶

Cycling rate: **3%**²⁷

Years of cycling-specific investment: **5 years**

Walking rate: **not available**

Years of walking-specific investment: **5 years**

The towns of Brighton and Hove were combined into a unitary authority in 1997 and the combined entity was subsequently given city status in 2001.²⁸ Tourism is a significant contributor to the economy, as the city has been a seaside resort since the industrial revolution. Brighton is comprised of a historic conservation area centre surrounded by suburban settlements,²⁹ and is the fifth most densely populated city in the south east of England.³⁰ Temperatures in the south east average 11°C with the warmest months reaching close to 20°C. Average rainfall ranges from 650mm–950mm per year.³¹ Brighton & Hove is considered to be tolerant, accepting, and cosmopolitan³² and the number of people between the ages of 20–44 is 41.7%.³³

2.3.2. Active Travel Solutions in Brighton & Hove

Brighton & Hove is one of Cycling England's 'cycling demonstration towns', and as part of this programme they have invested in cycling infrastructure such as cycle lanes, advance stop lines, and cycle parking. Since 2006 the city council has run a Personal Travel Plan in-house which has allowed a high level of quality control on the advice provided. This project has included developing travel plans for schools and the area's 30 largest employers. A way-finding system has also been introduced, providing signage so that cyclists can find their way without a map. Improvements so far have led in a cycling rate increase of 27% since 2006, resulting in the present rate of 3%. Brighton & Hove city council are now considering whether to adjust the timing of traffic signals to provide quicker journeys for cyclists.

A priority network for pedestrians has been developed and this is now used to target improvements in the walking environment. A way-finding system for pedestrians has also been introduced alongside the cyclist system and improvements have been made to increase their safety and convenience. These include raised crossings across roads, crossings that go straight across roads all at once, and the removal of guardrails.

As part of the cycling demonstration town programme, £1 million per year has been invested in Brighton & Hove with half coming from the city council and half coming from Cycling England. As well as this partnership, the council works with Sustrans – whose 'Bike It'³⁴ officer works out of the council offices – and with the local NHS primary care trust to increase cycling levels.

2.3.3. Key Investment Decisions in Brighton & Hove

During the development of the 2006/07–2010/11 local transport plan (LTP), the city administration was looking for ways to reduce congestion, improve safety, and improve air quality. There was a realisation that to do this, it was necessary to encourage people to shift their mode of transport from the car to more sustainable means. This resulted in strong cycling and walking themes in the final LTP. This focus was influenced by a high proportion of Green councillors at the time the LTP was being developed and a demographic in the city that is inclined towards sustainability.

Demand or leadership?

Key investment in cycling and walking was led by the council's Local Transport Plan. Focus on active travel was due to the mix of elected councillors including Green and green-minded members. While it is difficult to say whether the investment was initially popular with the general public, there is now support for it. Political support currently varies depending on the make-up of the elected councillors.



Photo by Tessier – http://commons.wikimedia.org/wiki/File:Brighton_pier.jpg

2.4. Copenhagen, Denmark



Photo by kk + – <http://flic.kr/p/7xqapt>



Photo by mobil'homme – <http://flic.kr/p/nAVTB>

2.4.1. Overview of Copenhagen

Population: **528,208** (city) / **1,680,271** (MA) people³⁵

Population density: **59** people per hectare³⁶

Cycling rate: **30%** (overall) / **38%** (commuting)

Years of cycling-specific investment: **25 years** (though some level of investment for 100 years)

Walking rate: **23%**

Years of walking-specific investment: **40 years**

Copenhagen is the capital city of Denmark with an area of 8,978 hectares.³⁷ It features a historic city centre and a coastal location. The city and surrounding region have significant logistics, biotech, pharmaceutical, and IT industries.³⁸ People aged 20–29 form the largest section of Copenhagen's population, at 23%, with 30–39 year olds forming the second largest section at 20%³⁵.

2.4.2. Active Travel Solutions in Copenhagen

For over 100 years, the city of Copenhagen has invested in cycling as a specific and distinct means of transport. However, 25–30 years ago the level of cycling investment was increased and a concerted effort made to improve conditions for cyclists. This has resulted in an extensive cycle path network, cycle parking, cycle lanes on all major roads, 'green waves'³⁹ on main cycle routes into town, and improved cycle crossings on busy streets. There has also been spending on pro-cycling publicity and work to encourage cycling to school. The current focus is on 'green cycle routes,' creating a 110km (68mi) network of cycle routes through parks, across the harbour, along minor roads (with low or no traffic), and linking residential areas. This is based on a plan of 20 routes developed ten years ago, and will also connect to routes outside Copenhagen to improve commuting over longer distances. Around 40km (25mi) of this network has already been built, and it will help in the city's target of a cycle commuting rate of 50%.

The pedestrianisation of Copenhagen's historic city centre started 40 years

ago, and a network of pedestrian streets has been developed in the intervening period. As part of a general drive to improve pedestrian safety, Copenhagen currently has a strategy, with an accompanying action plan, to increase the safety of pedestrian crossings (for example by installing pedestrian islands) by targeting places with registered accidents. An accessibility programme was also started 3-4 years ago with routes developed that provide facilities for those with sight and other disabilities. To bring all pedestrian initiatives together, development of an overall pedestrian strategy for Copenhagen is currently underway, due for publication later in 2010.

It should be noted that some of the pedestrian and cycle improvements are linked. For instance, the improved pedestrian crossings on busy streets were carried out at the same time (and with the same investment) as the crossings were being improved for cyclists. The 'green cycle routes' also provide facilities for pedestrians, providing network of pleasant walking routes. The city is also developing safer routes to school, with larger investments making the areas around schools safe for both pedestrians and cyclists.

It is not easy to put a figure on cycling or walking investment, as it varies from year to year. The level of spending will depend on what projects are needed, and often improvements to cycling and walking conditions are carried out as part of projects that originate from the normal transport budget. One of the interviewees stated that to give a sense of the scale of cycling investment, a reasonable approximation would be Kr75 million (£9 million) per year.

In the past, there was not any regional or national funding for active travel development, though the city of Copenhagen did at times cooperate with the former county government and the town of Frederiksberg on cycling projects. The Danish government has now created a national strategy for cycling, and last year made a large sum of money available for grants to fund cycling pilot projects. Copenhagen has worked with the surrounding municipalities to secure funding under these grants for a project to improve long distance commuting cycle paths. However, there is currently no funding available for walking from the Danish government.

2.4.3. Key Investment Decisions in Copenhagen

The first cycling-specific investment in Copenhagen occurred in 1905 when a bridle path was converted into a cycle track. In general, Denmark has had a cycling culture over the years, so people have grown up using bicycles. In Copenhagen, residents have always used bicycles, regardless of conditions, because it's an easy way to move around. In particular, there has been a strong tradition of commuting by bicycle.

By the 1960s, even as the car was becoming dominant, half of the cycle network was in place. Though existing cycle tracks were shortened at this time and cycling was not actively encouraged, new cycle tracks were still built on suburban roads where there was no conflict with cars, and the cycling tradition as a whole survived. As car use increased and other cities saw a big decrease in cycling over the 1960s and 1970s, the decrease in Copenhagen was minimal. Then, in the late 1970s, the oil crisis and an increase in

environmental consciousness led to an increase in cycle traffic.

In the 1980s, the Danish Cyclist Federation found itself led by a group of young idealistic cyclists. In contrast to the older members who had previously run the organisation, these new leaders often didn't have a car and they had a strong desire to see improvements in conditions for cyclists. They successfully tapped into the large section of the public who wanted to continue cycling but saw conditions deteriorating. This led to annual, colourful, demonstrations in front of the Danish parliament and Copenhagen town hall. Tens of thousands of people participated in the demonstrations, and the level of support both surprised and impressed the politicians. This led to increased investment and focus on cycling facilities and cycle tracks being built on more 'difficult' roads (for instance, where space was at a premium). The new cycling priorities were initially not popular with the planners, and there was some resistance, but the politicians pushed for more cycling investment and over time this led to cycling becoming 'mainstream' within transport planning.

Over the years, as the elected politicians changed, cycling policy became driven by the public servants working in the city government, culminating in a cycling policy adopted by the council in 2002. However, about four years ago there was a big change when two politicians stood for the council, basing their campaigns on a promise to improve cycling conditions. They were elected as Lord Mayor and Transport Mayor, and this resulted in more money being made available for cycling investment, and existing plans being properly funded.

Investment in walking in Copenhagen is part of the city's strategy for urban life. This includes goals to improve urban life by improving the conditions for walking and to encourage people to walk more and to take part in activities in the town. Two to three years ago, the Danish Walking Association (DWA) put pressure on politicians to sign up to the International Charter for Walking.⁴⁰ The DWA was able to gain the support of the Lord Mayor for this initiative, leading to the city council approving the charter and the Lord Mayor announcing Copenhagen's participation at the Walk 21 conference in 2008. The charter commits signatories to following its main principles of creating a culture where people choose to walk, and recognising the right for people to be able to walk safely and enjoy high quality public spaces. The charter includes a framework that local authorities can use to work towards its goals. Following this, Copenhagen was also chosen as one of four pilot cities for Walk 21's 'Making Walking Count' project. Additionally, community councils in Copenhagen have developed local plans for improving the walking environment in their areas.

Demand or leadership?

Key investment decisions for cycling were initially due to public demand, and this investment continues to have widespread public support. More recently, increases in cycling investment have been led by politicians who were elected with a mandate to improve cycling conditions. Walking investment has been part of the city's urban space development for many years. However the recent commitment to the International Charter for Walking was due to demand from a section of the public, and while not unpopular, did not have general public support. But there is now growing support for investment in walking, especially amongst communities involved in developing walking strategies.



Photo by sfbike – <http://flic.kr/p/BbyDd>



Photo by rossjamesparker – <http://flic.kr/p/a3bR2>

2.5. Freiburg, Germany



Photo by nick wright planning – <http://flic.kr/p/4khv4P>

Photo by Gregorius Mundus GPRS only – <http://flic.kr/p/6RaaFL>

2.5.1. Overview of Freiburg

Population: **219,665** (city) / **627,464** (MA) people⁴¹

Population density: **14.35** (city) / **2.84** (MA) people per hectare⁴¹

Cycling rate: **27%**

Years of cycling-specific investment: **30 years**

Walking rate: **22%**

Years of walking-specific investment: **2 years**

Freiburg is in the German state of Baden-Württemberg, on the south west of the upper Rhine and the Black Forest. The city covers 15,306 hectares, with a significant forest area taking up 6,489 hectares (compared with 4,871 hectares for settlement and traffic).⁴¹ Protest and civil disobedience in the 1970s prevented a nuclear power station from being built near Freiburg, and set it on a course to become Germany's "ecological capital". Freiburg now has a large network of environmental organisations, businesses, and research institutes.⁴² The largest number of jobs are in the service sector, including the university, hospital, city and state administrations, and financial institutions. With an average age of 40.8 years, the largest part, 43.3%, of Freiburg's population is between the ages of 18 and 45.⁴¹

2.5.2. Active Travel Solutions in Freiburg

Freiburg has put in place a comprehensive set of solutions to encourage cycling. They now have 420km (261mi) of cycling paths, equating to about 2 metres per person, and the main routes are cleared of snow every day in the winter. Additionally, 90% of streets with car traffic have a speed limit of 30km/h (19mph), and there are many "cycling streets". Cycling accidents have been reduced by improving visibility in problematic locations, and advance stop lines are provided at many junctions. The city has also invested in 9,000 bicycle parking spaces which includes spaces for cycle trailer parking (as there are many in the city). And cycling stations have been created which combine a 1,000-space bicycle parking garage with a repair shop, tourist

information, and a café.

The city has put in place a way-finding system with signs showing key destinations and their distance. Three cycling maps, including one specifically for mountain biking, have been produced and a marketing campaign has been run to show cycling as a trendy, mainstream activity based on the slogan “switch on the brains, switch off the engine.” The Garten- und Tiefbauamt department of the council has also developed a programme for ecological commuting called *GuT Bike-King*. Participants aim to maximise their cycling, both in commuting and for business. The person who cycles the most in a year gains an extra day of annual leave, and if everyone reaches a certain total mileage goal there is a party held for participants.

Investment in walking facilities is more recent, and so less developed. However, walking paths have been built near the river Dreisam, others are planned, and there is a pedestrianised area in the city. Plans are in place to create a pedestrian way-finding system similar to the one installed for cyclists. And a programme aimed at older residents is in place, which has resulted in the installation of benches at locations useful for people that need to rest regularly.

Investment in cycling specific projects is about €470,000 (£417,000) per year and walking specific projects is about €300,000 (£266,000) per year. However, many other projects also include improvements for walking and cycling, and so the full investment is actually significantly higher. For instance, one estimate of total cycling investment was placed at €1 million (£887,000) per year. This investment is 90%–95% financed by the city of Freiburg and the projects are generally self-contained with little cooperation with national or regional bodies.

2.5.3. Key Investment Decisions in Freiburg

A large part of the reason for the focus on cycling investment is that there are many cyclists in Freiburg, they have a strong voice, and over the years they have demanded investment from politicians. Historically, the typical Freiburg resident is proud of the city’s green image, and their default position on an issue tends to be to opt for the sustainable option. The election of a Green Mayor in 2002 has also contributed to the investment in active travel.

Demand or leadership? Key cycling investment was due to public demand, and it continues to be popular. In recent years, the election of a Green Mayor has also helped.



Photo by A. Hornung – http://en.wikipedia.org/wiki/File:Freiburg_Schlossberturm_Panorama_2010.jpg

2.6. Ghent, Belgium



Photo by gregraisman – <http://flic.kr/p/2MLbNH>



Photo by Stuart Pinfold – <http://flic.kr/p/5guNpm>

2.6.1. Overview of Ghent

Population: **237,250** (city)⁴³

Population density: **15.19** people per hectare⁴³

Cycling rate: **15%** (permanent residents) / **17%** (including students)

Years of cycling-specific investment: **20 years**

Walking rate: **18%** (permanent residents)

Years of walking-specific investment: **12 years**

Ghent occupies 15,618 hectares in the Flanders region of Belgium at the meeting point of the Scheldt and Lys rivers.⁴³ The northern part of the city contains many factories, and heavy industry accounts for over one in four jobs. However, the service sector provides the vast majority of employment in Ghent, especially the city and provincial governments, the port of Ghent, and the University of Ghent.⁴⁴ The average age in the city is 39.71 years, and the largest age group is 20–39 years, forming 31.4% of the population.⁴⁵

2.6.2. Active Travel Solutions in Ghent

Around 20 years ago, the town of Ghent started a programme to improve conditions for cyclists. The initial Ghent Bicycle Plan focused on safe bicycle infrastructure, generating a positive image for cycling (for instance, through publicity campaigns), and management of car traffic. The first rule in the plan's implementation was that any change to the road infrastructure would have to benefit the cyclist. This plan was adopted by the city council in 1993. The issue of bicycle theft was addressed through the installation of more bicycle parking. The success and popularity of the Bicycle Plan led to the creation of a mobility plan in 1997. This plan comprehensively addressed cycling, walking, and traffic issues. It included the introduction of a pedestrian area, removal of surface parking in the town centre, one-way streets, a freeze in the amount of car parking provided, and improved priorities for public transport. The result is that, in addition to the cycling rate quoted above, 20%–30% of Ghent's population now use a bicycle on a daily basis, and 35%–40% of secondary school students cycle to school, rising to up to 50% in rural

areas.⁴⁶

The city's investment in cycling varies depending on the projects in place, but is in the region of €7–€10 million (£6.2–£8.9 million) over five years. On top of this other bodies invest in cycling improvements in Ghent. This includes the regional road agency (who pay for cycle paths along regional roads), the regional waterways agency (cycle bridges and underpasses; towpaths turned into cycle paths) and to a lesser extent the infrastructure division of the national railway company (building 'inspection paths' that can serve as cycle paths alongside new railway bridges). The Flanders government has also provided support and investment to Ghent based on their cycling plan, as the plan required infrastructure development in the region around the city. It is difficult to put a figure on investment in walking, because it is not paid for through a dedicated fund.

2.6.3. Key Investment Decisions in Ghent

In common with many other cities, traffic in Ghent was increasing twenty years ago, and becoming a problem. Historically, cycling was popular in Ghent but cycling was starting to decline due to safety concerns and lack of good facilities. Accidents involving young cyclists also started to occur more often and this generated press coverage. At the same time, the alderman (executive councillor) for traffic and public works in the early 1990s, Frank Beke, did not have a car and cycled around the city. He therefore had first-hand knowledge of the issues facing cyclists and wanted to maintain and increase the cycling levels. He developed the Ghent Bicycle Plan and had it adopted by the full council. This led to the city council changing its whole approach to motorised traffic, and ever since, an integrated approach to transport which considers the needs of all users has been normal operating procedure in Ghent. These days, when a road without a cycle path is refurbished, the public will not accept the project if cycle path construction is not also included.

Demand or leadership?

The initial plan and development was led by the Alderman for Traffic and Public Works, and subsequently the full city council. However, this plan and the investment was also popular with the general public as well who were growing concerned about safety and facility issues (indeed, the alderman who developed and drove the Bicycle Plan was later elected as Mayor). Investment in the pedestrian environment followed on naturally from cycling and this 'mobility' investment continues to be popular.

2.7. Graz, Austria



Photo by Michael Dawes – <http://flic.kr/p/4tQve1>



Photo by thisisbossi – <http://flic.kr/p/5tdyiW>

2.7.1. Overview of Graz

Population: **235,477** (city) / **369,955** (MA) people⁴⁷

Population density: **20.21** people per hectare⁴⁸

Cycling rate: **16%**

Years of cycling-specific investment: **21 years**

Walking rate: **22%**

Years of walking-specific investment: **none**

Graz covers an area of 12,758 hectares, of which 40% is considered 'green space'.⁴⁸ For centuries, the city has been a crossroads for people from the Germanic, Balkan, and Mediterranean regions and these influences are reflected in the buildings of the historic city centre, which is a UNESCO World Heritage Site.⁴⁹ Graz has top level research institutes and automotive engineering, biotechnology, renewable energy and environmental technology, and creative industries form key sectors of the economy.⁵⁰ The average temperature in the city is 9.4°C and in an average year rainfall of more than 1mm occurs on 103 days and there are 1,890 hours of sunlight.⁵¹ At 43.3%, 20-44 year olds make up the largest section of the population.⁵²

2.7.2. Active Travel Solutions in Graz

In the 1980s, there was talk within the Graz city council about setting a speed limit of 30km/h (19mph) on certain roads. However, the councillor responsible for traffic at the time decided to think about it the other way around, instead setting the standard speed limit as 30km/h (19mph) and designating key arteries with a speed limit of 50km/h (31mph). Following on from this, the council invested in cycling infrastructure in the city centre areas that were already pedestrianised as well as increasing the number of pedestrian zones. A public awareness campaign to encourage cycling and improve the image of cycling was also conducted.

In 2003, Graz implemented the EU bicycle policy audit tool BYPAD.⁵³ This involves evaluating all aspects of cycling policy and provision, including paths,

parking, infrastructure, awareness programmes, and the level of know-how amongst officials. Two recent results of the use of BYPAD in Graz are a good signage system and good cycling map. All of these improvements have resulted in a doubling in cycling in Graz's city centre over the last 20 years.

Graz also has one of the biggest pedestrian zones in Austria. While walking has not been a specific investment target in the past, since 2008 the city council has made more money available for pedestrian-related projects. Graz is now carrying out a shared space project. This involves a new design of crossings, focusing on improving safety, and removing pavement clutter such as railings and signs. Overall, the goal is to create a safe environment but shift responsibility for safety and actions onto individuals, instead of trying to dictate and corral people to safety.

Historically, investment in walking and cycling has been carried out by the city on its own. However, more recently a change in regional government led to the appointment of a regional mobility officer. This resulted in money being made available for cycling projects in Graz. In the last four to five years, the Austrian federal government has also provided support to local administrations that are improving cycling conditions as a way of reducing carbon emissions.

2.7.3. Key Investment Decisions in Graz

In the 1970s and 1980s, there was a high level of citizen activism in Graz which was fairly influential. Activists managed to stop a large highway being built through the centre of Graz, and this led to the downfall of the mayor at the time. So by the 1980s, there was an understanding amongst some that the mobility of non-motorised traffic should be improved. At the same time, there was a general concern at the level of traffic and that it was increasing. The council's thinking was initially to designate specific roads with a 30km/h (19mph) speed limit. However, the councillor responsible for traffic, Erich Edegger, was a cyclist and progressive in his thinking about mobility. He realised that more roads and parking were not the solution to the traffic problem. Instead he proposed that 30km/h (19mph) should be the standard speed limit, with exceptions for key arterial roads, and improvements in cycling conditions and public transport.

Although the chamber of commerce wanted more roads and car parking, Cllr Edegger was a conservative from the business community. He therefore 'spoke their language' and framed his plans in terms of their economic benefits. This made it possible to push the plans through. While at first many people thought that a 30km/h (19mph) standard speed limit was 'crazy', the result was that traffic did not slow down, yet accidents dropped.

Tragically, Cllr Erich died in 1992 and progress on cycling and walking slowed. But the 'spirit' remained, and Graz had already been declared the premier cycling city in Austria. While it was still difficult to take road space from cars for cycle paths, there was more of a recognition that this could be worthwhile, and a level of investment in active travel continued. In 2008, a new coalition was formed to run the city council and since then there has been an increase in the available funding for active travel projects.

Demand or leadership?

The initial boost in cycling and walking facilities, safety, and investment was due to the leadership of the city councillor responsible for traffic in Graz. While his plans weren't popular to begin with, after their implementation showed them to be beneficial, the public was and continues to be supportive.

2.8. Groningen, Netherlands



Photo by betsythedevine – <http://flic.kr/p/5rZT3Y>

Photo by R.A.C.Heikoop – Wikimedia Commons: A-Kerkhof_noordzijde

2.8.1. Overview of Groningen

Population: **184,227** (city) / **346,417** (MA) people⁵⁴

Population density: **22.01** people per hectare⁵⁵

Cycling rate: **55%**

Years of cycling-specific investment: **30 years**

Walking rate: **not available**

Years of walking-specific investment: **none**

Groningen is the economic and cultural capital of the northern region of the Netherlands, covering 8,372 hectares.^{56 55} The universities and colleges are a big part of the city, with key aspects of Groningen's industry being the service sector, transport, and food, and emerging ICT and life sciences sectors.⁵⁷ Groningen has a young population – 25–64 year olds account for 54%, with only 11% of people being over 65 years old.⁵⁸

2.8.2. Active Travel Solutions in Groningen

Groningen has an extensive network of cycle lanes and paths, including bridges and tunnels to provide convenient connections. There are also traffic lights specifically for cyclists, and a programme is currently under way to increase the provision of cycle parking. This has resulted in up to 60% of all city centre traffic movements being made by bicycles. However, there is not a specific programme focused on walking. There is a general policy to reduce street clutter (for example, signs, guard rails) and this contributes to improving the pedestrian environment.

Total investment in cycling over the last four years in Groningen has been around €10–€12 million (£8.9–£10.6 million). The Dutch government provides funding to the provinces and allows them to choose how they spend it. From Groningen's total investment in cycling, €6 million (£5.3 million) came from the city and the rest came from the province. In general, the city has a high level of cooperation with the province to make sure that routes connect with

villages in the region and that there is an integrated approach to cycling facilities. They have also completed a large amount of jointly-financed work with the nearby city of Assen. So while there has not been cycle-specific funding directly from the central government, the province's funding comes from the Dutch government, and the province has contributed to cycle projects.

2.8.3. Key Investment Decisions in Groningen

By the 1970s, there were a substantial number of cars in Groningen's city centre, and the city council wanted to reduce this traffic. They developed a traffic circulation plan which banned through traffic and restricted parking in the city centre. While parking in the city centre is very expensive, there are parking garages on a ring road around the city 400–500 metres from the centre which are less expensive but still pricey and several park and ride facilities at the city boundaries 2–3 kilometres from the centre.

As a result of car parking fees the majority of cars park in the boundary facilities and, combined with the ban on through traffic, the number of cars in Groningen were substantially reduced. Many residential areas also had attractive cycling routes to the city centre and so cycling in Groningen increased. In the 1980s, the city council noticed this increase in cyclists and, at the same time, the cyclists started demanding improved facilities. This led to the investment in cycling which has resulted in the current very high cycling rate in Groningen.

Demand or leadership?

The restrictions on car traffic which led to an increase in cycling were led by the city council and were initially unpopular. However, as conditions for cyclists improved and more people started cycling, the traffic circulation plan and subsequent investment in cycling facilities have proved to be popular with the residents of Groningen.



Photo by Wutsje – http://commons.wikimedia.org/wiki/File:090420_Guyotplein_Groningen_NL.jpg

2.9. Hannover, Germany



Photo by yeled – <http://flic.kr/p/ckJtW>



Photo by Heidas – http://commons.wikimedia.org/wiki/File:Hannover_-_Kroepcke.jpg

2.9.1. Overview of Hannover

Population: **519,212** (city) / **1,128,810** (MA) people⁵⁹

Population density: **25.43** people per hectare⁵⁹

Cycling rate: **13%**

Years of cycling-specific investment: **20 years**

Walking rate: **28%**

Years of walking-specific investment: **no walking-specific investment**

Hannover is the capital of the state of Lower Saxony, with the city itself covering an area of 20,414 hectares, and the metropolitan area covering 229,064 hectares⁵⁹. This includes significant areas of green space, with parks, gardens, forest, and farming land accounting for 40% of the area. The city forest alone accounts for 12% of the city.⁶⁰ Car manufacturing is historically associated with the city, but it now has a strong service sector as well, employing 48.8% of the population. The key industries here include education, insurance and banking, state government, travel, and communications technology. Manufacturing (24.6%), hotel and catering, and transport (26%) also make significant contribution to the economy.⁶¹ Hannover also hosts some of the largest trade fairs in the world.⁶² The majority of the city's population – 60.8% – are between the ages of 18 and 60 years old.⁶³

2.9.2. Active Travel Solutions in Hannover

After World War II, a ring road system was built around Hannover's city centre, and segregated cycle paths were included as the space was available. Hannover has a large city forest, other green areas, a small river with wide banks, and the Maschsee artificial lake, all of which have extensive path networks for cycling and walking. These networks are connected to each other and to the surrounding streets, creating a convenient set of routes for getting around the city. The network is also connected to outlying villages. This is complemented by a way-finding system with signs to guide both

cyclists and walkers. More recently, bicycle lanes have been installed on some secondary main roads and advance stop lines have been put in around the city. There are also 30km/h (19mph) zones throughout Hannover and a small cycle park at the main train station. However, a key weakness in the current provision is that there are a lack of direct cycle routes from residential areas to the business areas in the city centre.

With regards to walking, there has been little specific investment so far, with most improvements coming from accessibility features (such as drop kerbs and raised bumps at crossings) being brought up to the German standards. However, there is now a plan to increase the walking links between residential and business areas in Hannover. A traffic master plan has also been adopted which includes targets for increasing the amount of walking in the city.

To date, cycling investment in Hannover has primarily come from the recreation department, as the genesis of the network was in that department's plan to put paths in the city's extensive green areas. However, there has also been outside funding help. The German federal government provides funding to the German state governments, and the latter decide on how the money will be used. In terms of cycle paths, the Lower Saxony government only provides Hannover with federal funding for improving the safety or quality of main road infrastructure. However, money has also been available for cycle parking (where the state pays 65%–75%), and the way-finding signage (where the state paid 75% and the regional government, with EU funding, paid for a further 12.5%). The city council has also worked with the regional government and outlying villages in its project to create cycle routes that connect to the villages and has also accessed EU funding to produce studies on how best to connect surrounding villages with Hannover.

2.9.3. Key Investment Decisions in Hannover

As noted above, due to available space, segregated cycle paths were included when the ring road system around Hannover's city centre was built during rebuilding after World War II. However around 1980, the planning and the nature and recreation departments started a project to establish a bicycle and walking network for the many green and recreational areas in Hannover. This started as small circular routes through the green areas and a signage system for these recreational paths. Eventually though, through making small links (including linking up to the ring road network), and further signage improvements, the routes became useful commuting routes. As people became familiar with the recreational paths on weekend rides in good weather, they became more interested in commuting by bicycle. The city council is now doing further work to improve cycle path connections with the specific aim of making cycle commuting easier.

The ring road cycle paths were built due to historical events and the easy availability of space, whereas the green space cycle network was developed due to a desire to improve recreation facilities. In the case of the latter, improving recreational cycling facilities was a policy of those in control of the city council at the time. These same people had also been involved in the founding of the German cycle club, the ADFC, which had been campaigning

for improved recreational cycle facilities. At the same time, in the 1980s, improved recreation was generally a goal of city planning in Hannover with targets set for the amount of green space per person.

Demand or leadership?

Development of the cycle network in Hannover has been driven by leadership from the city council, but this cannot be separated from the public demand which led to the council's policy. The popular support for cycle investment continues today.

2.10. Lund, Sweden



Photo by bjaglin – <http://flic.kr/p/2gq1JA>



Photo by scratch n sniff – <http://flic.kr/p/cCyN5>

2.10.1. Overview of Lund

Population: **109,147** people⁶⁴

Population density: **2.54** people per hectare⁶⁴

Cycling rate: **21%** (entire city) / **40%–42%** (city centre)

Years of cycling-specific investment: **40 years** (initial) / **10–12 years** (stronger focus)

Walking rate: **11%** (entire city) / **23%–24%** (city centre)

Years of walking-specific investment: **5 years**

The city of Lund covers 43,027 hectares at the southern tip of Sweden.⁶⁴ With 40,000 students and more researchers than any other Scandinavian university, Lund University is a dominant part of the city, and has resulted in a strong research based economy.⁶⁵ Several multinational companies have offices in Lund, and inventions ranging from the Tetra Pak to a dialysis machine to mobile phone technology have all been created in the city⁶⁶ Over the winter, Lund gets approximately seven hours of daylight, while in the summer it receives approximately 17 hours.⁶⁷ The temperature is similar to southern England in the summer, with averages of 22°C, while in the winter it is slightly colder, averaging -1°C.⁶⁸ The population of Lund aged between 25–64 years comprises 52%, while those over 64 years old account for 14% and those under 25 years old 34%.⁶⁹

2.10.2. Active Travel Solutions in Lund

Lund has an extensive network of cycle lanes and paths, constructed to a high standard. Complementing this is the use of advance stop lines, and raised crossings for main road cycle paths that are crossing minor roads at junctions (so that cyclists have the right of way, and cars entering the junction from the minor road must go over the cycle lane 'bump'). The raised crossings are consistently used on all primary and secondary roads with cycle paths in Lund. The city has also invested in a large number of high quality cycle parking facilities spread around the city, including at the train station and regional bus stops. The parking at the station is part of the 'Lundahoj', a cycle

travel centre that also provides tools for repair, pumps for inflating tyres, anti-theft cycle marking, water, toilets, and a shoe shine.

Bicycle pumps are also located at other points around the cycle network, good quality bicycle maps are available, and so is a route planning website that provides the time needed to walk, cycle, take public transport, or drive between two points. The city has also increased safety for cyclists through slower speeds, the use of speed bumps for cars, and 'City Lock', a programme to discourage the use of private cars in the centre. Cycle training has been provided, and regular cycle promotion campaigns are run in an effort to change people's habits, especially in August and September. For example, representatives go to offices and compare the calories burned during a cycle commute to how many chocolate bars staff could eat; they also conduct door-to-door visits to persuade people to try alternatives to the car.

Lund does have an action plan to promote walking, and as part of this they have worked to improve accessibility of pedestrian routes, to create safe outdoor environments, and to connect recreation areas and safe routes to schools. For about 30 years, Lund has had a pedestrianised area in the centre of town, and when building cycling infrastructure they also consider the needs of pedestrians. Walking is also allowed on cycle paths.

The level of investment in cycling is difficult to put a figure on, as it comes from different budgets and varies year-to-year. There is a base level of Kr3 million (£277,000) spent on maintaining cycling infrastructure every year, but projects to improve facilities are in addition to this. For instance, one year Kr22 million (£2 million) was spent on tunnels. From 1998–2005, the city of Lund invested Kr80 million (£7.1 million) in the bicycle network as part of the LundaMaTs programme.

Funding does not only come from the city government. In the 1970s, the Swedish government provided subsidies to construct cycling and walking connections when building residential areas, but more recently government funds have focused on carbon-reduction plans and building a sustainable society (including the social aspects). Most national government funding is made available to the region, so Lund often works with regional partners and other cities to access this funding. Through this funding, Lund received Kr40 million (£3.6 million) per year to build cycle lanes, but the city was required to match the amount with their own money. Lund also contributes funding to support regional cycle networks (maintained by the Swedish Road Administration) and has a regional bicycle plan. This is one way that the city takes account of people who work in Lund but do not live there.

2.10.3. Key Investment Decisions in Lund

In the 1960s, when many cities were building multi-lane highways through their centres, there was a proposal to build one in Lund. At the time, the city planning process was secretive, but there were many activists who campaigned against the highway (which would have also resulted in the demolition of houses). Over approximately two years, the politicians changed their mind because of public pressure, and instead of building a highway, it was decided to invest in walking and cycling. In 1972, the city council

developed a strategic plan that set out the main cycle network from the city centre to residential areas. As part of the prioritisation of cyclists, space was taken from car traffic to build the cycle network. At this time, the 'City Lock' was also put in place – private cars were no longer permitted to drive through the city centre. Thus, opposition to the highway led to the exact opposite: cars had to drive around the city instead of through it. The City Lock contributed greatly to an improved pedestrian and cyclist environment. In later years, missing parts of the planned cycle network were gradually filled in.

More recently, the UN Agenda 21 agreement in Rio de Janeiro in 1992 led the Swedish government to develop its 'Local Investment Programme' (LIP) from 1995–1997. The LIP provided funding to towns, cities and regions for projects that would reduce carbon emissions or improve the local environment (eg. habitat and ecosystem improvement). The programme ran from 1998–2008.

Around the same time, in 1996, a political initiative within Lund city council led to the development and adoption of 'LundaMaTs'. This is a strategy which built on the existing investment in cycling by providing a comprehensive approach to developing a sustainable transport system in Lund. LundaMaTs provided a framework for implementation and goals reaching to 2030. The long-term goals mean that while Lund's governing administration has changed over the past 10–12 years and funding has varied, the overall goals and strategy for cycling in the city have remained the same. LundaMaTs's benefits were easy to communicate with the public and so were popular from the beginning.

One of the fundamental changes in approach that LundaMaTs brought about was the inclusion of spatial planning as part of a transport strategy. The overarching goal of LundaMaTs was to reduce carbon emissions, and its five areas of focus for reform were: town and country planning; the bicycle friendly town; extended public transportation; environmentally friendly car traffic; commercial and industrial transportation. More recently, as part of LundaMaTs II, pedestrian traffic has been added as a sixth area of focus for reform.

Demand or leadership?

The original investment in walking and cycling improvements were a result of public pressure which then led to strong political leadership. The more recent renewed focus on cycling (and, latterly, walking) investment came about through the political leadership which resulted in the creation of LundaMaTs. However, this cannot be entirely separated from strong public support for Agenda 21, and a demand from the public for action. LundaMaTs and investment in active travel remain popular with the public in Lund.

2.11. Stockholm, Sweden



Photo by Mastad – Wikimedia Commons: Stortorget



Photo by Jürgen Howaldt – Wikimedia Commons: Stockholm-Gamla_Stan-2

2.11.1. Overview of Stockholm

Population: **829,417** (city) / **2,019,182** (MA) people⁷⁰

Population density: **44.10** (city) / **30.97** (MA) people per hectare⁷⁰

Cycling rate: **6%** (city) / **3%** (MA)

Years of cycling-specific investment: **11 years**

Walking rate: **not available**

Years of walking-specific investment: **none**

Stockholm is the capital of Sweden, covering 18,806 hectares with the metropolitan area stretching to 65,193 hectares.⁷⁰ The area claims to be the economic centre of Scandinavia, with the largest gross regional product and highest concentration of multinational companies. Stockholm has large ICT, robotics, and life sciences sectors and is one of northern Europe's key financial centres.⁷¹ Stockholm is built across 14 islands, with a well preserved mediaeval centre,⁷² and the weather varies greatly between seasons. Winter temperatures of -7°C – 2°C see both heavy snowfall and milder, wetter weather. However, in the summer Stockholm receives sunshine and temperatures of 20°C – 25°C .⁷³ The city's population comprises 58% of people aged between 25–64 years, with 14% over 64 years old and 28% under 25 years old.⁷⁴

2.11.2. Active Travel Solutions in Stockholm

Stockholm has a network of both cycle paths and lanes, largely built over the last eleven years. They also have extensive cycle parking, with 800 new spaces installed every year. In addition to the cycling rate above, it is worth noting that car traffic is no longer increasing in Stockholm, while cycle traffic increases by 5% every year. The main reason that more people are cycling in Stockholm is because of its competitiveness with other modes. With the infrastructure in place, it is seen as simpler and faster than other ways of travelling for many journeys, and people are also attracted by the health benefits. Stockholm has not had a specific investment programme for walking,

but it is likely that this will be the next big transport issue to receive attention.

Standard practice in Stockholm is that investments in walking and cycling are included in all projects, and there are seldom dedicated budgets for walking and cycling. Thus, it is difficult to put a figure on the amount of investment. From 1999, the city significantly increased its investment in cycling infrastructure, but this then decreased in 2006. The infrastructure already in place at this point allowed for continued increase in cycling rates in the city. The city of Stockholm has not worked with other authorities in its cycle investments, and has only received small amounts of funding from the Swedish government.

2.11.3. Key Investment Decisions in Stockholm

After the 1994 elections for Stockholm city council, the Social Democrats needed the Green Party to gain a political majority. The influence of the Greens led to the creation of a cycle action plan for Stockholm, which was finished in 1998, before the next set of elections. The 1998 elections resulted in a new ruling coalition of three parties which included the Stockholm Party (a local green party) who won 5% of the vote. To form the coalition, the majority partners had had to accept cycling investment demands made by the Stockholm Party. As a result, from 1998–2002, cycle paths and cycle lanes were installed in nearly all the big streets in the city. For the first few years, these cycle investments were not popular, and there was adverse media coverage. But by 2002, the public had started to appreciate the benefits of the cycling investment and the media circus had died down. In the elections that year, the Social Democrats and Green Party were voted back in, and cycling investment continued. However, in 2006, the Social Democrats lost power again, the new coalition no longer included the Stockholm Party, and cycling investment was cut back. While there are no longer any big cycling investment projects, investment continues on smaller projects, especially in places where there is little disruption, such as suburban areas where there is more space.

The long period of politicians talking positively about cycling, the cycle action plan, and the big investments in cycling infrastructure have made cycling normal and popular in Stockholm. Interviews have shown that average income amongst cyclists is high, higher in fact than the average income of car or public transport users. So even politicians that would not otherwise be pro-cycling have to be careful not to be seen as anti-cyclist, and cannot ignore cycling completely. Before 1998–2000 cycling was seen as “nerdy”, but the investments and increases in cycling since then have changed attitudes so that cycling is now considered “trendy”. Even that anti-fashion symbol the helmet is not a deterrent – almost 70% of people cycling into the city centre use helmets voluntarily.

Demand or leadership?

Cycling investment in Stockholm was due to the political leadership of small minority parties in the city’s governing coalitions. While the investment was initially unpopular, once the facilities were installed and people started using them, that situation reversed.

2.12. Utrecht, Netherlands



Photo by rxwarren – <http://flic.kr/p/4vkZPb>



Photo by Peter Lipman/Sustrans

2.12.1. Overview of Utrecht

Population: **299,891** (city) / **598,714** (MA)⁷⁵

Population density: **29.7** people per hectare⁷⁶

Cycling rate: **33%**

Years of cycling-specific investment: **always**

Walking rate: **not available**

Years of walking-specific investment: **none**

Utrecht is the fourth largest city in the Netherlands, covering 9,930 hectares, and centrally situated within the country.⁷⁶ The university, the largest in the Netherlands, plays a key part in the city which also boasts a strong creative industry and IT, business services, and financial services sector.⁷⁷ At 52%, the majority of the population is between 18–44 years old.⁷⁶

2.12.2. Active Travel Solutions in Utrecht

Importantly, in Utrecht cycle provision is considered the job of anyone in a relevant position in the city council, not just the bicycle officer. The city has a large network of segregated cycle paths, and this is aided by a policy stating that all roads with a speed limit greater than 60km/h (37mph) must have a segregated cycle path alongside. Spatial planning in certain areas of the city is also approached with the specific aim of enhancing rates of cycling. In the past 10 years, the city has also installed roundabouts at many junctions and this has resulted in a halving of the death rate.

Currently a bicycle parking facility with over 7,000 spaces is being built at the main train station, and cycle parking has been installed close to shops in the city. In residential areas, if five or more people on the same street request a secure cycle parking facility, the city will install one. At the same time, there are parking restrictions for cars in the city centre.

Cycle lessons have been provided for children and older people, and some insurance companies also provide bicycle training, as this is seen as a way of

cutting down on insurance claims. Walking has received less attention in Utrecht, but there is a network of safe walking paths. These allow people to walk to many locations, even some outside of the city itself.

Cycling in Utrecht has benefitted from funding made available by the Dutch government, as part of their traffic safety agenda in the 1980s and early 1990s. This led to the above policy of cycle paths for fast roads, and also to the creation of home zones.⁷⁸ Over the last ten years, there has been support for cycling improvements on rural roads this work has been carried out at a regional level.

2.12.3. Key Investment Decisions in Utrecht

Cycling is considered a priority amongst the community in Utrecht, so there has always been investment in cycling facilities. The situation relative to investment for cars did deteriorate somewhat in the 1960s and 1970s. The result of those changed priorities was an increase in road fatalities of cyclists and walkers in the 1970s, particularly of children. This led to the formation of the pressure groups 'Secure Traffic Netherlands' and 'Children First' who led successful campaigns to improve the situation for non-car users. Because of support for their aims, in the 1980s the first home zones were created in Utrecht⁷⁸. Further improvements such as segregated cycle paths next to fast roads and roundabouts at junctions followed on from this.

Demand or leadership?

Investment in cycling facilities has been a part of the culture of Utrecht since the bicycle first became widely used. However, a focus on the car in the 1960s and 1970s led to safety issues for pedestrians and cyclists, which resulted in demand for a renewed focus on pedestrian and cyclist facilities. The city met this demand, and their cycling and pedestrian investments continue to be popular.



Photo by lambertwm – <http://flic.kr/p/5JtTPG>

2.13. Zürich, Switzerland



Photo by Bernard Garon – <http://flic.kr/p/Mb9gv>



Photo by ITDP Europe – <http://flic.kr/p/7egbiS>

2.13.1. Overview of Zürich

Population: **380,499** (city) / **1,132,237** (MA)⁷⁹

Population density: **41.4** people per hectares⁷⁹

Cycling rate: **8%**

Years of cycling-specific investment: **30 years**

Walking rate: **46%**

Years of walking-specific investment: **25**

Zürich sits on the river Limmat at the point where it flows into Lake Zürich, and covers 9,190 hectares.⁷⁹ Of this, 23.5% is classified as woodland. Zürich is a one of Europe's key financial centres, with the financial sector generating approximately one in four jobs in the city. The city also has a strong biotechnology and life sciences sector, significant education and hospitality sectors, niche positions in automotive supplies and aerospace, and a growing creative economy.⁸⁰ The climate in Zürich is similar to southern Germany, with summer temperatures averaging 16°C–18°C and winter temperatures between -1°C–2°C.⁷⁹ The population of the city is predominantly of working age, with 68% between 20–64 years old.⁷⁹

2.13.2. Active Travel Solutions in Zürich

In the 1970s, some cycle paths were built in Zürich, but only as part of projects planned for other reasons. This changed in the mid-1980s when a popular initiative to build a full cycle network in Zürich was carried out by the city council. The city has used publicity campaigns to encourage the use of cycling, a bicycle coordinator was hired, and cycle parking has been installed in the city centre.

The design of public spaces has always been seen as important in Zürich, and they are generally of high quality. The city put in place an initiative to specifically improve the walking network, and residents could send in suggestions. Currently, walking projects are guided by the public space strategy that the city has adopted.

The cost of the cycle network that was built in the mid-1980s was Fr25 million (£15 million), and this was funded by the city. Since then, spending on cycling infrastructure has become part of the normal city budget instead of being project-based. Initially, the canton of Zürich was not supportive of cycling promotion and even today, the canton has different aims from the city. However, recently the Swiss federal government created a funding programme to encourage the development of active travel facilities in conurbations. To receive funding, cantons were required to create action plans for their conurbations that included investment to improve cycling and pedestrian facilities. The first of these projects will start in 2011 with the Swiss government paying for one-third of the costs.

2.13.3. Key Investment Decisions in Zürich

In the mid-1980s, the cycle group IG Velo (now Pro Velo) developed a plan to invest Fr25 million (£15 million) to build a cycle network in Zürich. Their campaigning resulted in a referendum put to the city's residents which resulted in a 75% vote in favour of the plans. The city council therefore built the cycle network. While the council had not been opposed to building a cycle network, the initiative came from IG Velo. The project to build the network helped to normalise cycle infrastructure spending so that it is now a standard part of the city's budget.

Demand or leadership? Investment in Zürich's cycle network came about due to a campaign by IG Velo which attracted wide public support. Active travel investments continue to be popular with the public in the city of Zürich.



Photo by A. Tigelaar

<http://commons.wikimedia.org/wiki/File:Pano-Zurich-CityScape-FromGrossMunster-RiverSide.jpg>

3. WHAT SCOTLAND CAN LEARN

3.1. Summary of European Examples

Although the cities in this paper vary in many ways, they have all invested in active travel over several years by funding infrastructure improvements and supporting Smarter Choices initiatives. In cases where active travel or their investments were not initially popular, it took a couple of years for the improvements to have an impact and for the general public to appreciate them. The cities with the highest levels of active travel have gone beyond the basics of building infrastructure by putting in place strategies that consider active travel in its wider context, taking account of issues such as spatial planning, education, marketing, car movements, interactions with other transport modes, and the quality of urban spaces. Importantly, these strategies were not just aspirations, but included concrete actions and specific goals and were backed up with appropriate funding.

Initial Drivers for Change

Summarising the interviewees' answers described in the 'Demand or Leadership' boxes in *Section 2*, three routes that led to key investment decisions are represented:

- (1) public demand
- (2) public demand leading to political leadership
- (3) political leadership.

The second reason is a combination of the other two, but appears to be a distinct situation (public pressure led to a change of attitude in the city's administration, after which further initiatives were driven by political leadership). However, it should be noted that in general, once the initial investment was made, active travel became a standard part of transport investment, and was carried forward by the local governments. The evidence gathered primarily refers to cycle investment, as specific walking strategies for cities are less common and more recent developments in some cases.⁸¹

The cities studied in this paper can be thus categorised as follows, with the one outlier shown in its own category. Note that for some cities, there have been two distinct phases of active travel investment, separated by many years. The categorisation here considers what was generally suggested as an initial key turning point by the interviewees.

Significant Public demand	Public demand leads to political leadership	Strong Political leadership	“Belong[s] to everyday culture”
Copenhagen*	Basel	Brighton & Hove	Bremen*
Freiburg*	Hannover	Ghent*	
Utrecht*	Lund	Graz	
Zürich		Groningen	
		Stockholm	

*indicates cities that identified as having a ‘cycling culture’ even before active travel investment

Cycling Culture

As the lists above show, having a ‘cycling culture’ is not a prerequisite for either the public demand or political leadership which can lead to successful active travel investment. In the majority of cities in this study, the population did not have a propensity to cycle before the events which led to an increase in active travel. In these cases, a cycling culture was actually created by the investment and pro-cycling activities of the local government. It generally did not take many years for the normalisation of cycling to take hold, what was required was a consistent message with changes on the ground to back up that message.

Local Concerns Leading to Action

It is interesting to note that environmental concerns were not amongst the key concerns leading to active travel investment except in one city in this study (Lund). The main reasons that action was taken were concerns over cyclist and pedestrian safety, car congestion, conditions and convenience for existing cyclists, recreation opportunities, and air quality. Taken together, these are key components of the concept of ‘quality of life’. So while wider environmental issues undoubtedly have an (eventual) impact on the quality of life in a city, it was the more tangible issues, a desire to provide a better daily living experience for people on the ground, that has led to action.

Level of Government

In all cities studied, the investment in active travel has been coordinated and implemented by the local government (equivalent to Scottish city councils). Most funding has come from the local authorities as well. In some cases, there has been central or regional government funding or encouragement, but there are also cases where cities have acted in opposite ways to their regional or national administrations. In practical terms, it makes sense for active travel initiatives to be developed at the local level. As shown in *Section 2*, there are a variety of active travel solutions used in the studied cities. For instance, some prefer cycle paths, some prefer cycle lanes, and others have a mix of both. The solutions that make sense for a given city or town will be dependent on local conditions and preferences, and will likely also vary depending on the local area and its street and development layout.

3.2. Lessons We Can Learn in Scotland

General Lessons

The cities studied in this paper span a range of sizes, climates, industries, and densities such that it is possible to identify lessons which could be applied to Scottish cities. It is clear that successful active travel programmes require strong action at the local level, though this should be encouraged by central government, particularly given that we are now much more aware of the wide range of benefits active travel can bring on a population-wide scale. A good example of strong central government support is the Swiss federal programme that resulted in the canton of Zürich creating an action plan to improve active travel, described in *Section 2.13*, above.

When developing plans for integrated active travel, local authorities should focus on improving the 'quality of life' in the city, instead of wider environmental and carbon reduction issues. While these larger issues are important, focusing on people's daily experiences will result in investment that will genuinely improve walking and cycling conditions, include consideration of social issues, and provide opportunities to the public instead of asking for sacrifice. This will make it easier to show how active travel plans will benefit the city, and should make it easier to gain acceptance for changes.⁸²

However, it is important to remember that investment in active travel is not always initially popular, especially when it involves taking away road space from cars. But experience shows that once people have had a chance to benefit from much more conducive and pleasant environments for walking and cycling, they come to appreciate them and, in fact, demand them. So politicians must be prepared to show strong leadership, not to defer to an often hysterical local press, and to see the plans through the first couple of years. The examples in this paper show that it generally did not take many years for cycling to become 'normal' or 'trendy'. What is required is consistent promotion of active travel alongside changes on the ground to improve the experience of walkers and cyclists.

Active travel strategies must set goals that span several years and include specific actions that will be taken to improve conditions and encourage an increase in cycling and walking. It is clear from the cities in this study that taking action over several years requires funding over several years. While public campaigns were used in some cities, these were in addition to the infrastructure that was provided and improved in all cases. In the ideal case, local authorities would develop a comprehensive, long-term sustainable travel strategy, like Lund's 'LundaMaTs' (see *Section 2.10* above). The inclusion of spatial planning and other forms of personal and commercial transport will ensure a coordinated approach, one that considers all issues affecting active travel, and transport in general. As Dr Martin Haag, former Head of the Garten- und Tiefbauamt Department at Freiburg Council said, "traffic policy must cover all areas of town planning and urban development with a comprehensive strategy. Town planning must ensure that as little avoidable traffic arises as possible."

Specific Cities

Stockholm stands out as being most inspiring in the Scottish context. While their cycling rate of 6% is not as high as in other cities, this has been achieved in a little over ten years, and is growing. Their cycle action plan was developed and then funded due to the influence of minority parties in a coalition-governed local authority. And the improvements made were not fancy, but practical: a large cycle network and cycle parking, both built over the ten years. In just two years, cycling went from being a “nerdy” way to travel to a “trendy” and practical one. While car traffic holds steady, cycling continues to increase because people in Stockholm see it as a convenient way to get around. Stockholm shows that it is not difficult to take a city with low levels of cycling and no cycling culture and change it into a city where cycling is growing and considered a popular form of transport in a few years. With political will, a practical plan, and consistent funding and messages, the Scottish cities could be like Stockholm.

This is not to devalue the significant accomplishments in other cities or to suggest that we should not aim for the higher cycling and walking rates achieved in many of them. We most certainly should aspire to reach cycling rates of 30%–50% in our cities, and develop practical strategies so that we reach these goals. But such goals will require many years to reach. It is inspiring and motivating to see that in a relatively short period of time, Scottish cities could change the perception and use of cycling as a form of transport, on the path to much more ambitious targets.

The other city worth mentioning specifically is Graz, because of its use of the BYPAD bicycle policy audit tool (see *Section 2.7* above). Scottish cities should evaluate this tool and consider using it to develop the cycling parts of any active travel strategy. BYPAD could be a useful way of ensuring a high quality cycling action plan that considers all aspects of cycle provision, including issues such as whether there is a need for greater technical expertise at the local authority. By using this tool, a local authority would benefit from the experience of other cities in the network and of the BYPAD auditors.

3.3. Potential Barriers to Improving Active Travel in Scotland

When considering the processes that led to active travel improvements in the cities studied above, the following issues stand out as being potential barriers to similar improvements in Scotland:

- (1) Lack of public demand for active travel
- (2) Lack of strong local leadership on active travel
- (3) Lack of or fluctuations in funding
- (4) Lack of commitment over the medium- to long-term

As discussed in the introduction to this report, there are no specific geographic or cultural conditions in Scotland that preclude higher cycling and walking rates.⁸³ However, decisive and effective action must be taken at a local level and this can either be driven by local politicians, or by public demand that forces politicians to take action. Importantly, there must also be

funding behind any strategy that is developed, so that it can be implemented and supported over several years.

Over recent years, various Scottish cities have had some of the necessary elements discussed in this paper. However, there has been a lack of long-term strategies, resulting in inconsistent investment from year-to-year. Too often, active travel investment (though minuscule compared with other transport budgets) has been seen as disposable, something that can be there one year and gone the next. And it is not clear that there is a general understanding in local authorities that two to three years of sustained and significant investment will be necessary before the benefits will be widely felt by the public. To see real improvements in active travel, local politicians might need to take decisions that require leadership for one or two years before becoming widely popular. Because while there is public demand for active travel in parts of Scotland, it has not yet achieved the sufficient scale or influence necessary for politicians to feel that they must provide genuine funding to improve the conditions for walking and cycling.

4. CONCLUSIONS

It should be entirely possible to make walking and cycling popular forms of transport, and achieve regular annual increases in their usage in Scottish cities, towns, and villages. It is clear from drawing comparison with other cities of similar size and topography across the continent that there are no insurmountable barriers – it is essentially a question of political and public will. What is needed is to create a multi-year strategy to ensure well-directed investment, to see it through, and to update and adapt the strategy as goals are met.

Scottish local authorities should develop travel strategies focused on **improving people's daily walking and cycling experiences and non-motorised mobility**. These strategies need to **span several years**, be **visionary**, include clear **actions and goals**, and identify **funding**. A focus on 'quality of life' will allow local governments to **provide opportunities** for the public, and it will be possible to communicate and implement a **positive vision of the future of personal transport**, instead of framing the discussion in terms of sacrifice and limitations. Ideally, local authorities should develop sustainable travel strategies that **put active travel in its wider context**, including spatial planning and other forms of personal and commercial transport.

These strategies **must recognise walking and cycling as essential in achieving targets for future sustainable economic growth**, health objectives and overall quality of life. They are essential in achieving ambitious targets such as those set out in the Cycling Action Plan for Scotland and by several local authorities in Scotland. As goals and targets are met, the strategies need to be updated and adapted.

Cities in Scotland should **look to Stockholm for inspiration**. Through simple but meaningful and consistent investment, Stockholm went from a city with low levels of cycling and no 'cycling culture' to one where cycling is a popular, convenient, and growing form of personal transport. The change in attitudes towards cycling took place in just two years.

Clearly, in the democratic systems of Western Europe it is not always possible to separate political leadership from public demand. The two impact on and alter each other. But in representative democracies, there can be a strong role, and need, for bold leadership that is not immediately popular with the general public (and particularly the media), but that has the larger interests and aspirations of the population at heart. Bold vision and leadership on active travel, and effective communication of its benefits, are what is needed now. If this is not forthcoming, it is fair to say that our political leaders are shying away from making essential decisions that would lead to a more prosperous, happier and healthier Scotland.

5. RECOMMENDATIONS

Section 3 drew together the experiences of several European cities' investments in active travel, as described in *Section 2*. Through the subsequent analysis of these experiences, this report came up with the following recommendations:

Leadership

- Local politicians need to provide strong, visionary leadership to develop, implement, and carry through a robust, comprehensive, and long-term strategy for active travel.
- On occasion active travel investment might not be initially popular, especially when reallocating road space or funding away from private cars, but once improvements are in place people will appreciate and support them.

Focus on the Individual's Experience

- To be successful, active travel strategies and long-term development plans must focus on improving the daily experience of pedestrians and cyclists of all ages and abilities.
- Strategies should be based around enhancing the quality of life for the general population.
- Meaningful improvements must be made to the conditions for walking and cycling, with active travel consistently promoted over several years. This will lead to cycling and walking becoming normal and popular forms of transport in two to three years.

Integrate Active Travel

- Ideally, a strategy for active travel should be part of an integrated sustainable travel strategy. This would consider active travel in its wider context, including issues such as spatial planning and all forms of personal and commercial transport.
- A comprehensive travel strategy will ensure that cities realise the wide range of benefits which result from high levels of active travel. An excellent example of such a strategy is Lund's 'LundaMaTs'.
- Conversely, long-term redevelopment and regeneration plans must be developed with pedestrian- and cycle-friendly environments recognised as the core around which economic growth, public health, sustainability and overall quality of life are built.
- Active and sustainable travel should therefore be prioritised over individual motorised transport schemes and recognised for the wide range of Scottish policy objectives that they meet.

Local, Lasting, Funded,

- Detailed strategies for active or sustainable travel must be developed at the local level.

- Funding programmes from central government play a key role in encouraging the development and securing the implementation of active travel strategies.
- Strategies for active travel must always span several years, with specific, meaningful actions and goals.
- It is clear from the cities in this study that to increase active travel rates, appropriate funding is required over multiple years to improve infrastructure.

Best Practice Inspiration

- Stockholm can be seen as an example of how quickly appropriate action can change attitudes to, and increase use of, active travel in a city that started from a similar situation to those in Scotland.
- Local authorities should consider using the EU BYPAD bicycle policy audit as part of their active travel strategy development and consider similar auditing tools for walking.

NOTES

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- 81 It should be noted though that walking rates are higher in most European cities in this paper when compared to those in Scotland. Pedestrians seem to be at the heart of public realm and public space development strategies, as opposed to being addressed through specific walking strategies.
- 82 It is important to note that wider environmental issues are important, and an increase in active travel will have a positive impact on them. The point being made here relates to how best to develop, and focus, plans for improving active travel, not to the relative importance or interaction of carbon reduction *versus* quality of life improvements.
- 83 Though outside the scope of this report, even the rural nature of much of Scotland need not be a barrier in and of itself. In the rural areas around Ghent, the cycling rate for secondary school students is up to 50%, compared with 35%–40% within the city.