

Health economic benefits of cycling in Glasgow



Bruce Whyte,
**GCPH Seminar - Growing the evidence base
that cycling is good for health and the economy
St Andrew's in the Square, 21 May 2013**

Public health's role?

‘public health is the science and art of preventing disease, prolonging life and promoting health through organized efforts of society.... constant attention is required to *maintain the environment in a healthful condition*’ (Charles Winslow 1920) FPH, NHS Education for Scotland

What role for government & the state?

‘The state has a responsibility to provide *the conditions under which people can live healthy lives*’ (*Ethics of Public Health*, Nuffield Council 2007)

‘the fundamental duty of government...is to *support a healthy future for the people*’ (*The Future of Public Health*, Institute of Medicine 1998)





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Civilising the Streets

Jolin Warren

- investigated the social and political conditions that led to

investment in active travel

Key ingredients contributing to successes included:

“Strong, sometimes visionary, political leadership led to investment”

Active travel strategies improved individual’s day-to day ‘quality of life’ e.g. through increased safety, less car congestion, recreation opportunities and air quality

Public opinion changed from sceptical to supportive in less than two years (Stockholm)

Investment coordinated and implemented locally but often finance from national government was a vital factor

Appropriate funding is required over multiple years to improve infrastructure



Civilising the Streets
How strong leadership can deliver
high quality of life and vibrant public spaces

Jolin Warren
For Sustrans Scotland
and the Transform Scotland Trust
June 2010





COPENHAGEN - CITY OF CYCLISTS

- < City of Copenhagen : Home
- < Resident in Copenhagen
- < City & Traffic

City of Cyclists

- > Copenhagen's Bicycle Strategy & Policies
- > Cycle statistics & socioeconomic benefits
- > Cycle tracks and cycle lanes
- > Press, publications and media
- > Links

Public transport

City safety

Parking

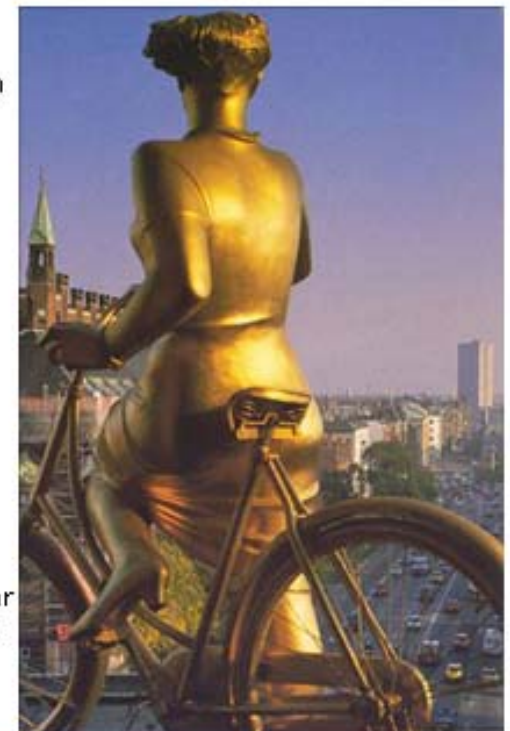
Copenhagen - the City of Cyclists

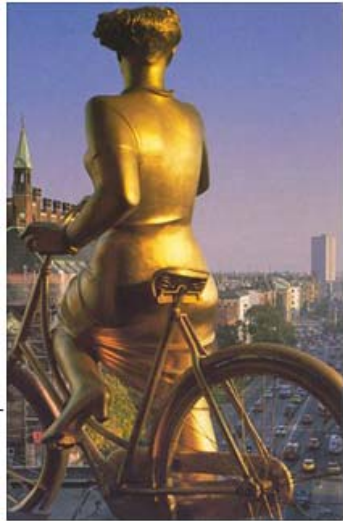
Bicycles make out a huge portion of Copenhagen's visual appearance. When coming to Copenhagen you will not only see bicycles parked at every station and in every street. The most impressive fact is the vast amount of Copenhageners on bikes that are an integrated part of traffic and the urban infrastructure.

Bicycles play a vital role in Copenhageners' everyday lives. The bicycle is used for all means: for getting to work or school, going out for a night on the town, transporting construction materials or appliances, bringing children to kindergarten, going for a recreational ride, or just for gazing at other Copenhageners on their bikes. No matter what the purpose will be, the bike is the answer.

The bicycle offers a cheap, comfortable, easy, and eco-friendly way of getting around. And when we ask Copenhageners why they choose their bike over the car or public transport they simply answer: because its the fastest way of getting around in the city.

That is why we must ensure that the bike keeps on





Copenhagen

Good, Better, Best – The City of Copenhagen’s Bicycle Strategy 2011-2025

Copenhagen to be an eco-metropolis by 2015

In 2008, the City of Copenhagen politicians unanimously decided to work towards making Copenhagen a cleaner, healthier and more environmentally friendly city, including aiming to be world’s best city for cyclists.

Bicycle Accounts

Every two years, the City of Copenhagen draws up a so-called Bicycle Account. This is an assessment of what the city has achieved compared to its cycling objectives.

By 2015 Copenhagen hopes to have achieved:

- A minimum of 50% of Copenhageners cycling to their place of work or education
- A reduction of at least 50% in the number of cyclists seriously injured in Copenhagen traffic
- At least 80% of Copenhagen cyclists feeling safe in traffic.
- A new bike-share system

bikes are an **integrated** part of traffic and the urban infrastructure ...

...bicycles play a vital role in Copenhageners' **everyday lives**....for getting to work or school, going out for a night on the town, transporting construction materials, bringing children to kindergarten, going for a recreational ride, ...

...Copenhageners choose their bike over the car or public transport because its the **fastest way of getting around in the city.**



Copenhagen Bicycle Account 2010

- The proportion of bicycle trips to work and study in Copenhagen dropped from 37 % in 2008 to 35 % in 2010, primarily due to the harsh winter months at the beginning and end of 2010
- In 2010 the number of seriously injured cyclists dropped to 92 annually (versus 252 seriously injured cyclists in 1996)
- For every major cyclist casualty cyclists have biked 4.4 million kilometers, the equivalent of 110 times around the world.
- *“City is cool with clearing the cycling lanes early in the mornings so I have biked my 6 km to the office all through winter.” personal communication*

Cycling in Britain: The Potential for Growth

countries. In The Netherlands, 27% of journeys are made by bike, followed by Denmark on 19%. Even Germany manages 10%, with Austria, Switzerland, Belgium, Sweden, Italy and France all lying between 5% and 9%. Britain however languishes towards the lower end of the European league table, with less than 2%.

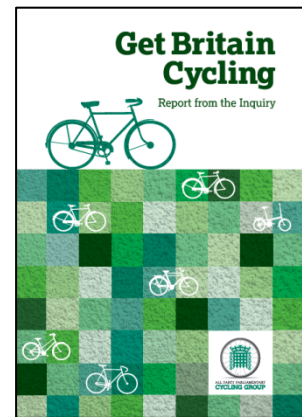
decades, Oxford and Cambridge boast continental levels of journeys made by bike (17% and 30%) Across the country some local authorities are showing

In 2009, the six cycling demonstration towns, including Exeter and Darlington, recorded an increase in cycling of almost a third. This boost was delivered at an average cost of just £3m per town. And other cities have

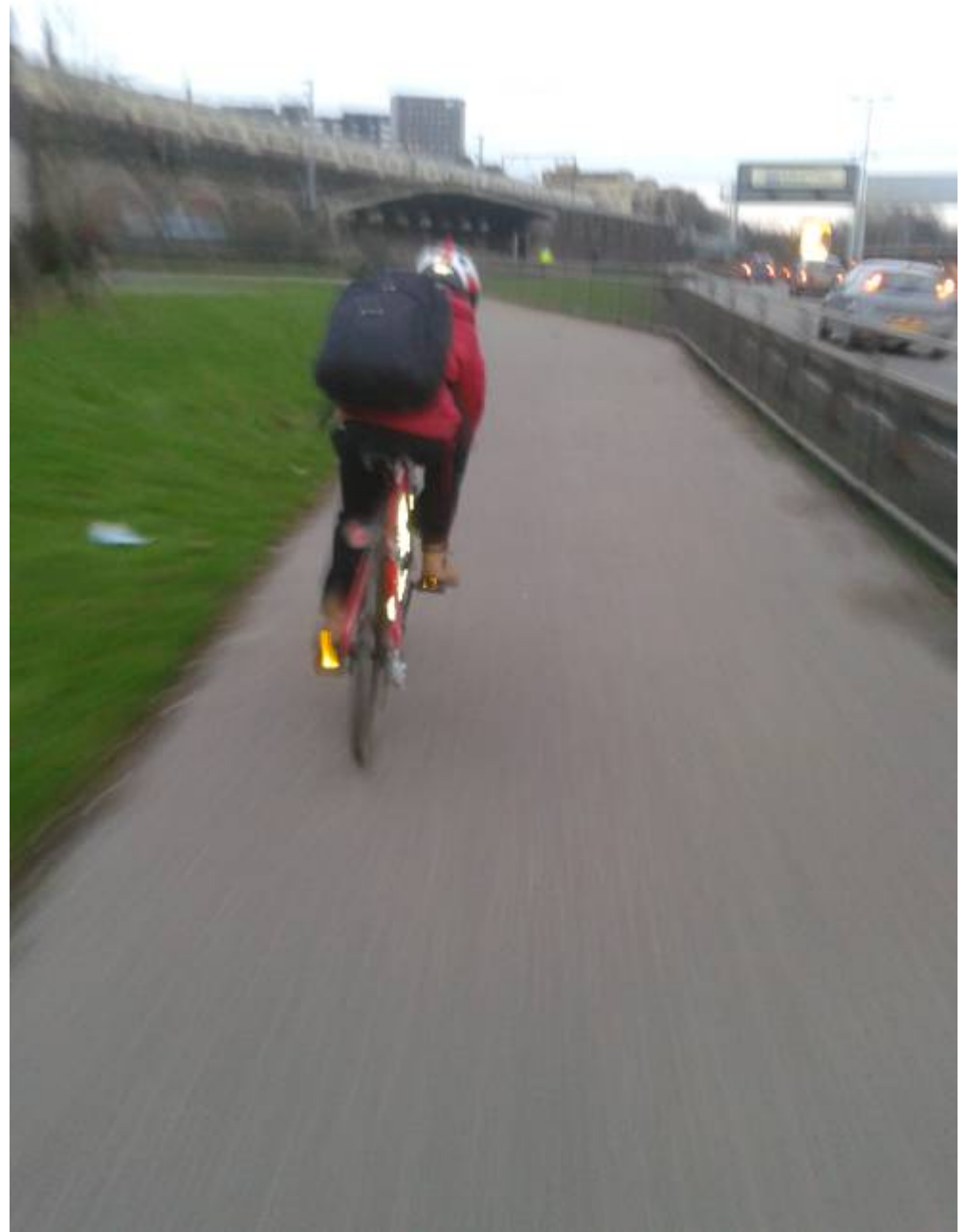
woken up to the benefits of cycling and have begun to catch up: in 2011 Bristol (up 63%), Manchester (up 21%) and Nottingham (up 9%) boasted of significant increases over the previous decade, albeit from low bases.

portion of commute trips made by Hackney residents has more than doubled in a decade (up from 6.2% to 14.6%) and it is now one of the few places in Europe where more people commute by cycle than by car (down from 21.7% to 12.4%).

The number of cycles on London's main roads has more than doubled since 2000. During the rush hour there are now more bikes than cars crossing the Thames over bridges including Blackfriars, Southwark and Waterloo. The Mayor's new vision for cycling, boosting spending to



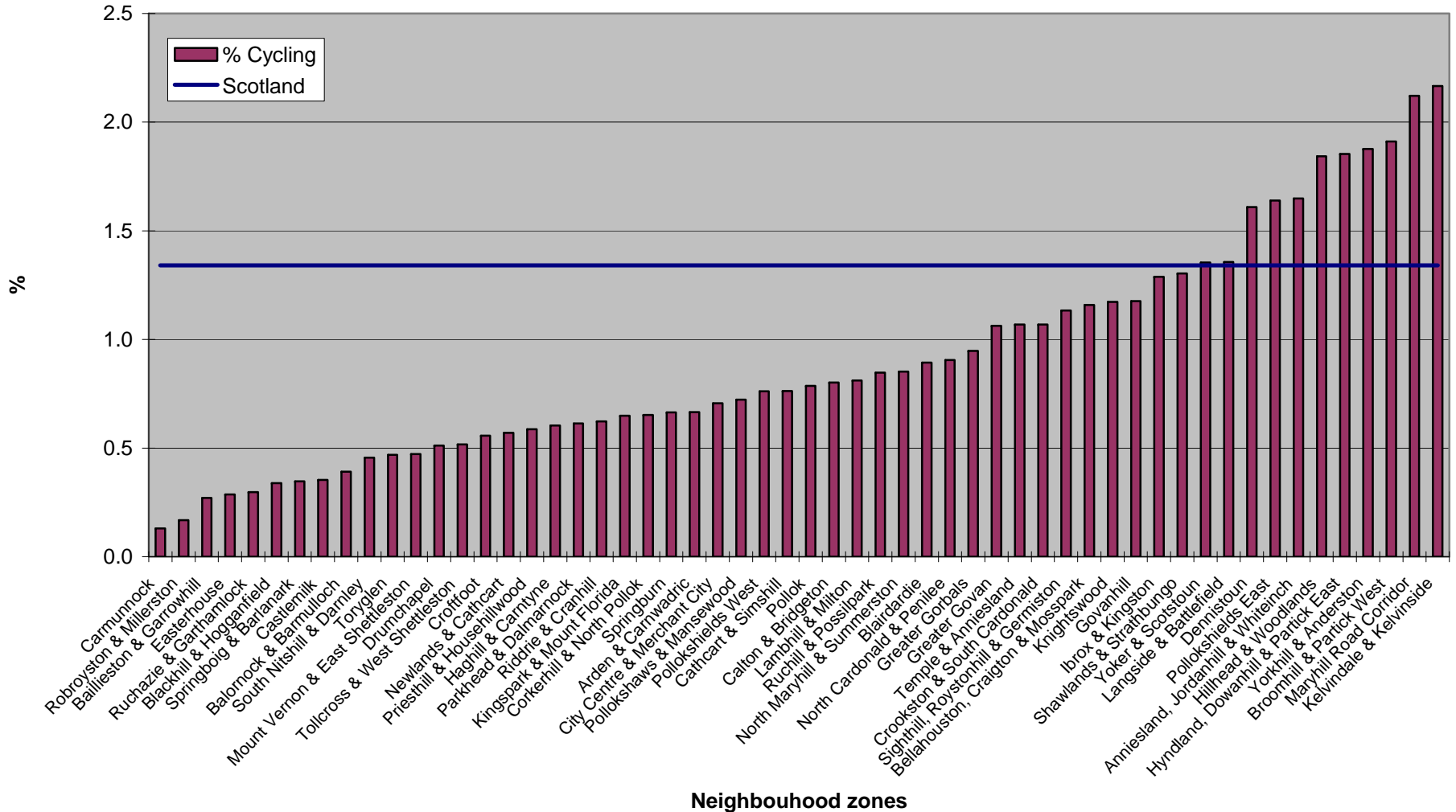
So how does
cycling in
Glasgow
compare?



Cycling to work in Glasgow by neighbourhood, 2001

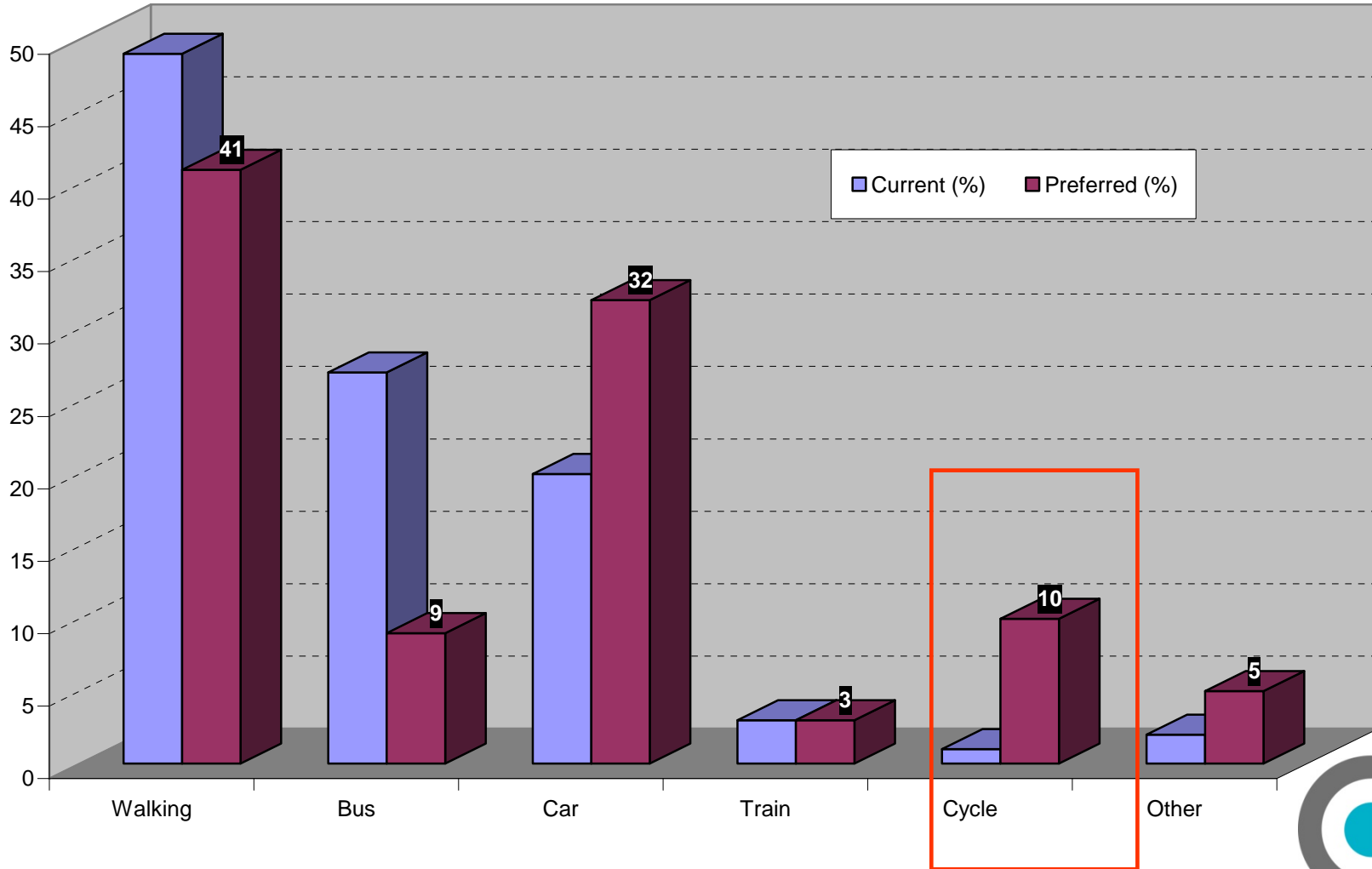
Source: Scottish Household Survey

% Cycling Glasgow city neighbourhoods 2001 census



Current and preferred methods of travel to school in Glasgow

Current and preferred methods of travel to school, S1-S4 Pupils in Glasgow
Source: Schools Survey - Health and Well-being of S1-S4 Pupils in
New Learning Community Schools in Glasgow City, 2008



Cycling

- Perceived as healthy activity but only 2-3% of journeys are by bike
- Barriers
 - Perceived safety on road (biggest barrier)
“They’re telling everyone to get fit, but it’s not safe to take a bike out. If they had more cycle paths it would be a lot better.”
 - Safe cycle facilities/showers and routes
 - Fear of theft
“There’s nowhere safe in the town that you could leave a bike. Do you not come back with your tyres missing? You take off your front wheel and lock it to the back.”
 - Weather
 - Lack of storage space at home

Glasgow City Council, City Centre Cycle Counts, 2009-2012

Cordon Cycle Count 2012

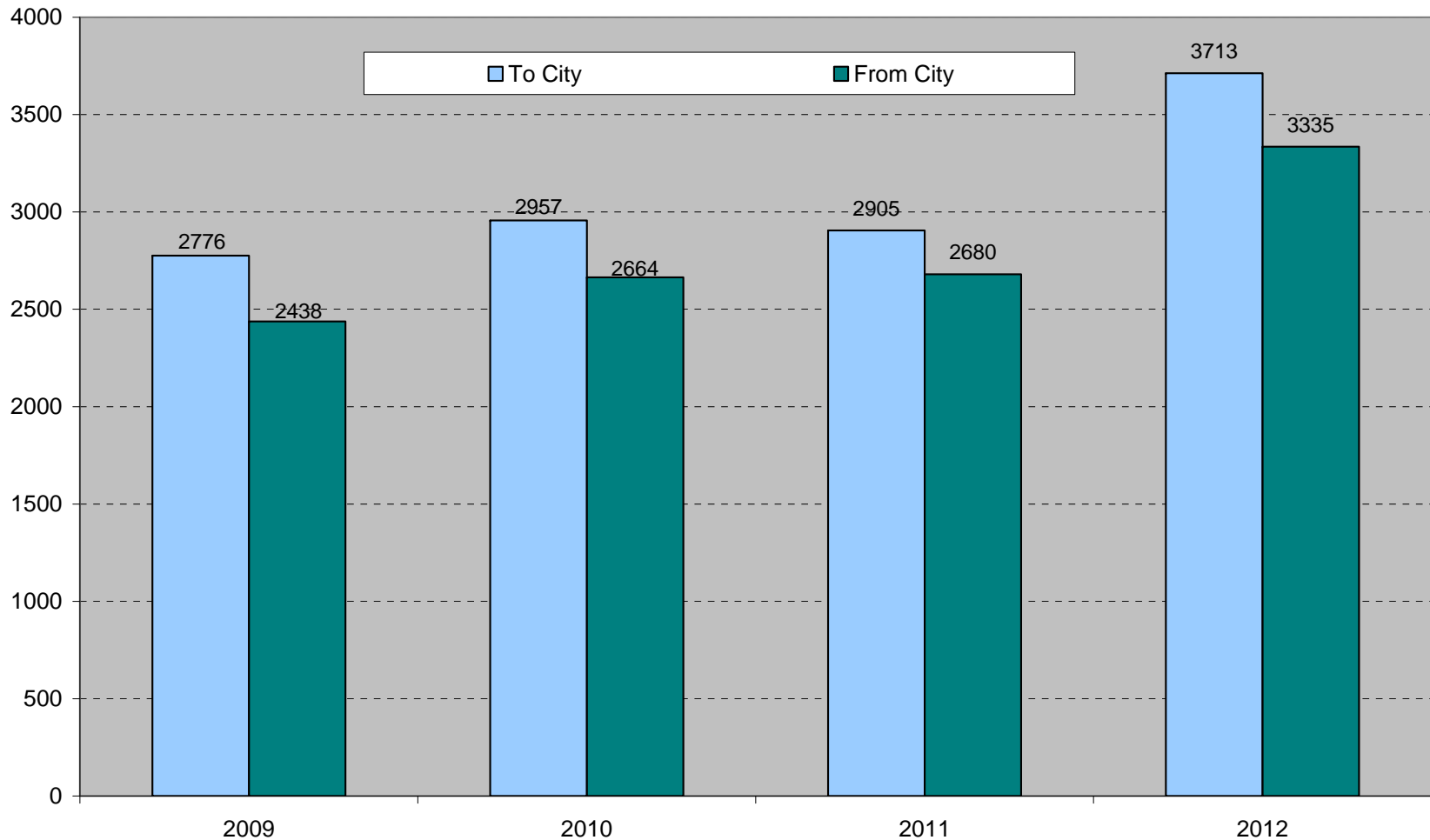


Glasgow City Council

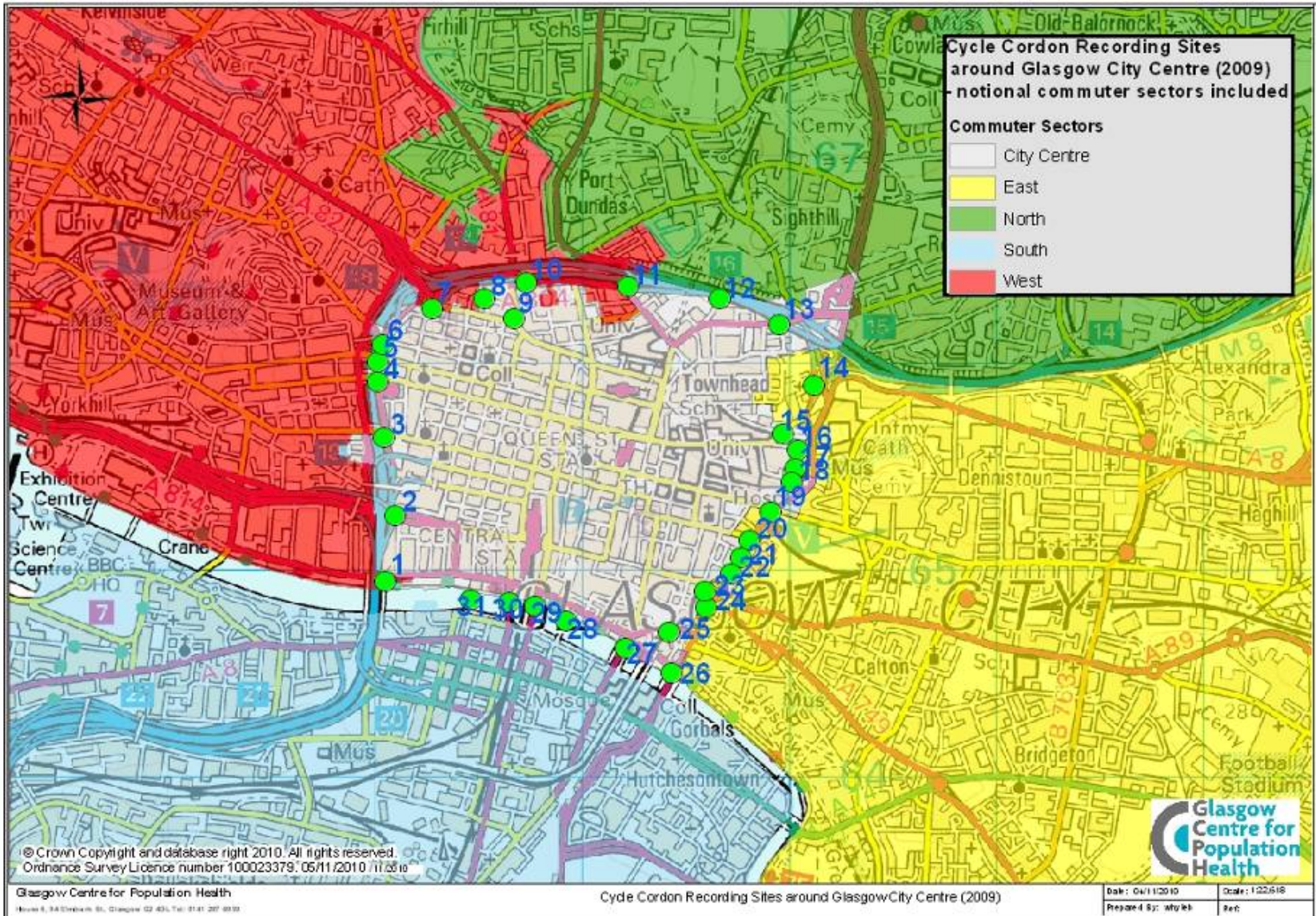
City Centre Cycle Counts, 2009-12

Glasgow cycle counts (Mean 2 day average) at all cordon sites around the city, 2009- 2012

Source: Land & Environmental Services, Glasgow City Council



HEAT analysis: Main aim was to explore the potential health economic benefits of cycle commuting into Glasgow city centre



HEAT analysis – Methods and data

Methods

- The HEAT tool was applied to local cycling data for Glasgow using the following basic formula:
- If x people cycle y distance on z days in a year, what is the value of the health benefits that occur as a result of the reduction in mortality due to their increased activity?

Two main datasets were utilised:

- Data on travel to work or study from the 2001 Census
- Cordon counts from surveys undertaken in Glasgow from 2009-2012, providing a count of cyclists entering the city at specific entry points over a two day census period.

HEAT analysis – Caveats and assumptions

- The main output of the calculation is the **mean annual benefit** in Euros due to reduced mortality as a result of cycling.
- The calculation assumes a time period for the build-up of benefit (normally set at five years) and averages the benefit over a timeframe (normally set at ten years).
- The tool requires a number of other parameters to be set as part of the calculation.
- Our analysis of health economic gain is based on a comparison of health gains due to cycle commuting into the centre compared to a notional situation where no one commuted into the city centre by bike.
- An average distance for this commute has been derived from 2001 Census data for Glasgow residents who commuted into the centre of the city by bicycle.

HEAT analysis – Results (1)

Census 2001 Data

- 2001 Census data indicated that 600 Glasgow residents commuted in and out of the city centre resulting in a total of 1,200 trips per day each with a mean trip length of 4km.
- Application of the HEAT tool calculation to these data yielded a mean annual benefit of nearly £1,000,000 (€1,084,000).

HEAT analysis – Results (2)

Glasgow cycle cordon count (2009-12)

Used to estimate commuting trips per day, into and out of the city centre by Glasgow residents based on a mean trip length of 4km

(corrected by a reduction of 20% to remove the impact of non-Glasgow residents' commuting – an estimate based on Census 2001 data)

Table 1. Estimated annual benefits based on Glasgow cordon count data 2009-2012

Year	Number of trips per day	Estimated mean annual benefit
2009	4,171	£3,133,530 (€3,769,000)
2010	4,497	£3,133,195 (€3,769,000)
2011	4,468	£3,355,697 (€4,037,000)
2012	5,638	£4,235,393 (€5,095,000)



HEAT analysis – Projections?

Currently 1% of all journeys by Scottish residents are made by bicycle (Scottish Household Survey Travel Diary , 2008), and we would like to see this increased tenfold to 10% by 2020. Cycling Action Plan for Scotland (2010)

	Trips per day	Estimated Mean Annual Benefit (EUR)	£	Cyclists
2012 (Cordon Count)	5,638	EUR 5,095,000	£4,348,538	2,819
Projections				
Two fold increase on 2012	11,276	EUR 10,189,000	£8,696,223	5,638
Five fold increase on 2012	28,190	EUR 25,474,000	£21,741,837	14,095
Ten fold increase on 2012	56,380	EUR 50,947,000	£43,482,820	28,190

Further potential research

Use HEAT analysis tools to:

- compare health economic impact of **all cycling commuting** in Glasgow 2001 vs. 2011
- extend this to a comparison of the health economic benefits of cycling in **Scottish cities** and potentially a range of other **UK cities**.
- extend these analyses to include analysis of the **health economic benefits of walking**, using the WHO HEAT tool for walking

Conclusions

Currently

- Glasgow has experienced an apparent rise in cycling in recent years but still has low levels of cycling compared to many other comparable cities
- Our study illustrates there are significant health economic benefits from current levels of cycling into the city **and** these could be much greater if levels of cycling rise e.g. from 1% - 10% of commuting journeys
- **But** active travel among adults most often seen as a necessity (i.e. no car) rather than a positive choice and safety is an issue

What needs to happen

- Infrastructure, facilities and safety need to be improved to encourage a shift
- There is much to be learnt from the commitment and actions taken in other UK and European cities
- This is a '**win-win, win-win**' - increasing cycling will have environmental, health, economic and community co-benefits

Opportunities

- An “active travel” Commonwealth Games
- Tourism potential
- Economic benefits



Transport and the Economy

- Submission of evidence to the House of Commons Transport Select Committee (2010) by Professor Phil Goodwin

“By far the best value for money is currently coming from spending on ‘smarter choices’ (travel planning, car-reduction policies, telecommunications as alternatives to some travel, etc), local safety schemes, cycling schemes, and the best of local bus and some rail quality and reliability schemes.”

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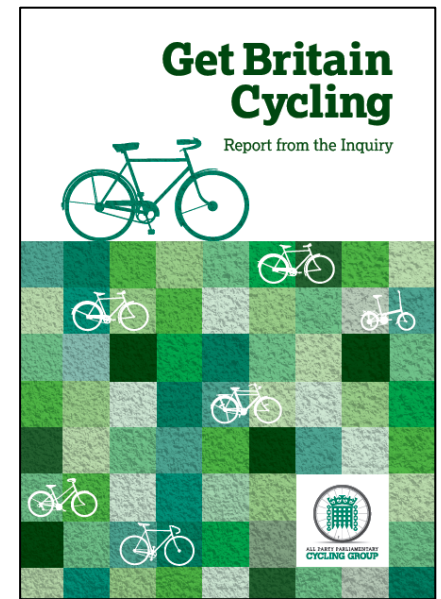
- **Health Benefits**

- **Momentum - Cycling is a mode of transport on ‘the cusp of greatness’ - Get Britain Cycling, All Party Report, April 2013**

Get Britain Cycling

Key recommendations include:

- More of the transport budget should be spent on supporting cycling, at a rate initially set to **at least £10 per person per year**, and increasing as cycling levels increase
- **Cycling should be considered at an earlier stage** in all planning decisions, whether transport schemes or new houses or businesses
- More use should be made of **segregated cycle lanes**, learning from the Dutch experience
- Urban speed limits should generally be reduced to **20 mph**
- Just as children learn to swim at school they should learn to ride a bike
- The Government should produce a detailed cross-departmental Cycling Action Plan, with annual progress reports





Pedal on Parliament: Cyclists demand better deal



The cyclists made their way from the Meadows in Edinburgh to Holyrood

Thousands of cyclists have pedalled to the Scottish Parliament, calling for 5% of Scotland's transport budget to be spent on cycling.

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