

'Can Road Pricing Increase Cycling in Urban Areas? The London Congestion Charge'

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ABSTRACT

One of the main deterrents for cycling in towns and cities is the threat of motorized traffic – the volume and speed of traffic being the two major risk factors and cyclists' concerns.

The London Congestion Charge in London, in operation since February 2003, has proved to be a very successful traffic management measure for reducing motor vehicle traffic and thus boosting other modes of transport, especially public transport, walking and bicycle.

Car traffic into the charged zone has reduced by 30% while cycle traffic has increased by over 15%. The reduced congestion allows traffic to flow more easily and improves the reliability of journeys. Another positive outcome from the scheme is that the charging zone is experiencing greater accident reductions than the rest of London.

Since July 4 2005, the daily charges increased by 60% from £5 to £8 – this increase may curb motorized traffic even further in central London and may encourage more cyclists to take over the roads and cycle more regularly.

This paper will explore cycling in London, the on-going projects and the positive effects of the Congestion Charge to date and ways forward to encourage a higher up take of cycling as a regular mode of transport for both non-discretionary trips such as commuting and school journeys, and discretionary journeys such as shopping and leisure.

CYCLING IN LONDON

Transport for London (TfL) is fully committed to increasing cycling as a regular mode of transport in the capital by 80% by 2010 and to making London a safe and cycle-friendly city. Cycling in London has already risen by 23% between May 2003 and May 2004. It has been widely reported that the use of cycle increased significantly in the summer following the bombings in central London in July 2005. Within the congestion charging zone the reduction in motorized traffic has also boosted cycle use in the capital.

TfL is increasing investment on cycling by 40% in 2005-06 to improve the safety and convenience of cycling in the capital. Such investment adds to the improvement and support programmes that are already underway, including:

- on-road cycle training by experienced instructors so that those new to cycling need not to be intimidated by the experience of cycling in the city
- 900 km of 'fast, safe, comfortable' cycle routes – London Cycle Network (LCN+) to be completed by 2009
- 150 km of paths in parks and along side canals upgraded to year round use by 2008
- provision of secure cycle parking facilities – 5,000 spaces on the streets and a further 5,000 at schools by the end of 2005-06
- state-of-the-art cycle interchange at railway stations – including Walthamstow and Finsbury Park in North London and Surbiton in South London

LCN+ represents a major investment by TfL to create a network of approximately 900km of high quality cycle routes by 2009/10. LCN+ is London's primary strategic cycle network on routes identified as having the highest demand for cycling. When fully upgraded the network will provide safer and more comfortable conditions for cycling with improved journey times and clear links through junctions. To cater for anticipated growth in cycling LCN+ is being designed to encourage more people to cycle while also improving conditions for existing cyclists.

According to 2000 figures, cycling accounted for 0.3 million trips a day in London, averaging 5km in length and a network speed of 16km/h. Thirty-four per cent of cycle trips had work as their main purpose/destination (GLA 2001). However, cycle use in central London increased by 41% between 1981 and 2003 (TfL 2005).

THE CONGESTION CHARGE

Operation

The Congestion Charge zone has been in operation in London since February 2003. The primary aim of the scheme was to reduce traffic congestion in and around the charging zone. The scheme was also expected to generate net revenues to improve transport in London. Charge payment levels have remained relatively constant since the introduction of the charges, at approximately 110,000 daily payments, including payments by residents and fleet accounts (TfL 2004).

The current affected area covers 8 square miles, including areas of City of Westminster, City of London, Islington, Camden, Southwark and Lambeth boroughs. The £8 daily charge applies to all those vehicles driving or parking a vehicle on public roads within the charged area, between 7.00 am and 6.30 pm, Monday to Friday,

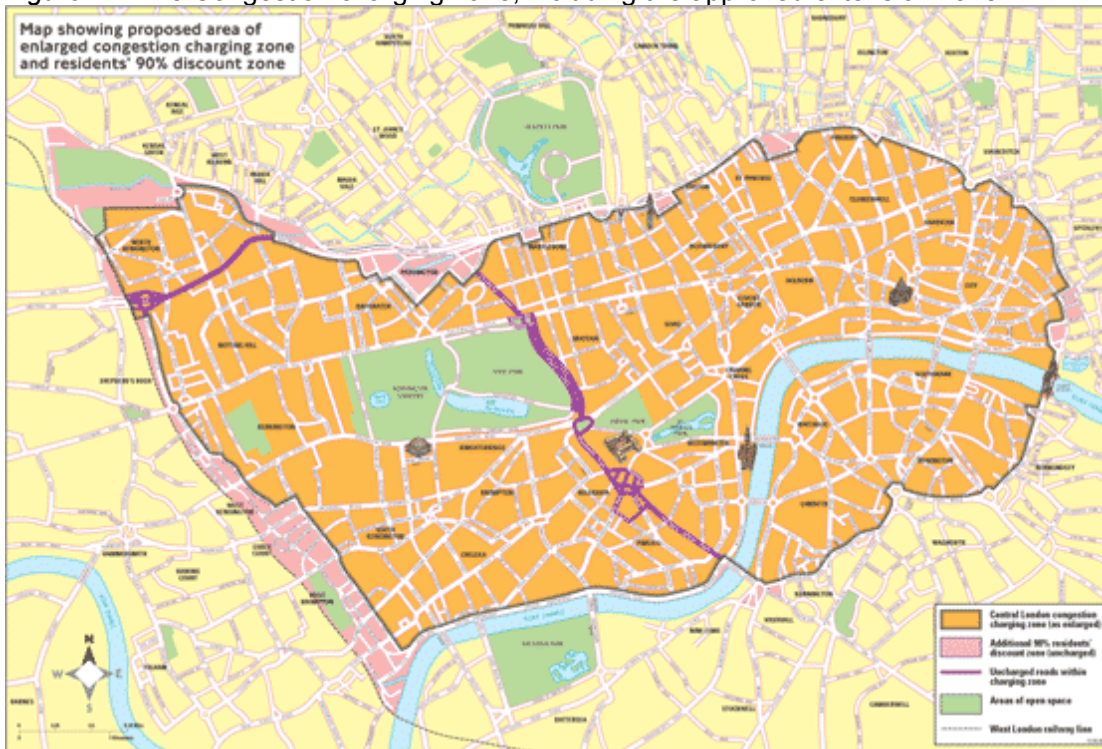
excluding weekends, public holidays and the period between Christmas Day and New Years day.

In September 2005, the Mayor of London, Ken Livingstone approved plans to extend the central London Congestion Charging zone westward embracing mainly the London borough of Kensington and Chelsea. The Mayor also announced that from September 2006, drivers would be able to pay the charge up to a day after entering the zone. The extended zone will become operational from 19 February 2007. Figure 1 shows the current congestion charging zone (right hand side of the map) and the approved west extension (left hand side of the map), divided in the middle by an uncharged corridor within the two zones.

Following extensive public consultation, a number of significant changes have been made to the original extension proposal, these includes:

- Extended residents' discount zone (shown in pink in the map)
- Charging hours to end at 18.00 hours, instead of 18.30 hours as it is now
- From September 2006, payments will be accepted until midnight on the next charging day after a vehicle has entered the zone

Figure 1 – The Congestion charging zone, including the approved extension zone



Source: <http://www.tfl.gov.uk/tfl/cc-ex/maps.shtml>

There are some exemptions to the charge, based on vehicles' taxation class, these include mainly:

- Motorbikes, mopeds and bicycles
- London licensed taxis and mini-cabs
- Emergency services
- National Health Service (NHS) vehicles
- Vehicles used by disabled persons

- Disabled passenger-carrying vehicles
- Licensed buses with 9 or more seats
- Electrical vehicles



Electrical vehicles are exempted



Change in traffic composition

In addition, residents within the charged area are eligible to a 90% discount from the charge.

By law, for the first ten years of its operation, all the net revenue from the charges is to be spent on improving transport in the capital. Plans include among others:

- Further improvements to the bus network
- Increasing public transport provision late at night
- Improvement to the walking and cycling environments
- Contributions to the cost of developing tram or high quality segregated bus schemes

Impacts of the scheme

The London traffic management scheme through charging really made an impact to the overall movements to and within central London.

The major impact of the charge was a reduction in the order of 65,000 to 70,000 car-trips into the zone, of which 50 to 60 per cent of these journeys have transferred to public transport, especially the bus.

Between 20 to 30 per cent of the movements have diverted around the charging zone and the remaining 15 to 25 per cent have made a variety of other adaptations. Overall, congestion within the charging zone reduced by 30% and the volume of traffic by 15% (vehicles with four or more wheels) (TfL 2004).



More (motor) cyclists, buses and taxis





Fewer cars, more pedestrianised areas



More cyclists

This reduction in motorized traffic has had a positive impact in the number of cycle journeys into central London – the observed increase in incoming cycle and motorcycles at the boundary of the charging zone amounted up to 6,000 movements during charging hours.

Transport for London's provisional assessment of the behavioural impact of the charges is summarised in Table 1, showing the likely displacements of car journeys to other modes of travel.

Table 1 – Displacement of car journeys into central London since the charges

| | |
|---|------------------|
| Total reduction in car movements at zone boundary | 65,000 to 70,000 |
| Through car movements – diverting around the charging zone, other changes | 15,000 to 20,000 |
| Terminating car movements – transfers to bus and underground | 35,000 to 40,000 |
| Terminating car movements – transfers to cycle, walk, motorcycle, taxi, car share | 5,000 to 10,000 |
| Terminating car movements – travelling outside charging hours | Under 5,000 |
| Terminating car movements – travel to other destinations, reduced frequency | Under 5,000 |

The recent trend in reduction of road accidents in London may have also contributed to the overall increase in the take up of cycling in the capital. There is no evidence of disproportionate changes to the numbers of accidents involving two-wheeled vehicles nevertheless there is some evidence of an accelerated decline in accidents inside the charging zone. Initial indications are that between 40 and 70 accidents per year have been prevented as a result of the scheme's effect on levels of traffic in the zone compared to pre-charging conditions. The recent trend of overall year-on-year decreases in road accidents seen across London is to be continuing.

Evidence shows that an increase in cycle traffic volumes in fact does not necessarily lead to increases in road accidents involving cyclists – in York, in Northern England, around 20% of trips are made by bike – over the last 15 years, casualties have reduced by 30%, while peak-hour cycle traffic increased by 10% (DETR, 2000).

In Greater London, pedal cyclists casualties decreased by 3% in 2004 compared with 2003 figures. Fatalities fell by 58% from 19 to eight, while serious injuries decreased by 21% and slight injuries showed no change. In three out of six boroughs within the congestion charging boundaries, Southwark, Westminster and Islington (part of it) the reduction in casualties were respectively nearly 23%, 12% and 8% (TfL 2005b).

Given that the numbers of cyclists rose and that accident rates have decreased it is expected that even more people will shift to cycling as a regular mode of travel into central London.

Finally, another very positive impact of the congestion charging in London was the improvement in air quality – there has been a reduction of 12% in NOx and PM10 emissions.

CONCLUSIONS

Cycling has an important role to play in making cities more sustainable. It is a quick, healthy, affordable and non-polluting means of travel that has the potential to increase the capacity of the road network. More cycling will lead to less congestion by reducing the number of short car trips. It will also help reduce air pollution and bring improvements in streets' environment.

The Mayor of London has pledged his commitment to attain an increase of 80% in cycling in London by 2010, and a further 200% increase by 2020 (based on 2000 figures). The trend of increase in cycle use in London has now been established and the Congestion Charge is reassuring such increases. Fewer vehicles on the roads is a win-win situation – the environment becomes safer, air quality improves, more pedestrians and cyclists are taking the roads in central London as well as more people are now using public transport.

TfL has a number of projects planned and underway to help to achieve those targets, as the paper has showed. The Congestion Charging scheme was one of the many successful initiatives that are boosting cycle use in central London – with the charges increase to £8, the extension of the charging area, a predicted further reduction in levels of traffic to and within the extended zone is expected so that cycle use will be even greater in London. The more cyclists on the roads the more new cyclists will take the roads.

It becomes clear that motorized traffic needs to be 'tamed' and that cycle facilities need to be in place in terms of segregated cycle lanes, parking, signage etc. The increase of cycle in London is evident and is surely a result of all the on-going initiatives focusing on and prioritising non-motorized traffic.

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