

APPRAISAL OF THE IMPACTS OF THE LONDON CONGESTION CHARGING SCHEME

Nick Lester, Mark Valleley, Hugh Collis

1. INTRODUCTION

The London congestion charging scheme (CCS) was introduced on 17 February 2003. Transport for London (TfL), who were responsible for implementing the scheme on behalf of the Mayor, have initiated a comprehensive monitoring programme to assess the impacts and implications of the scheme.

The Association of London Government (ALG) is an organisation representing the collective interests of the 33 London boroughs. The ALG submitted responses to each of the consultation exercises that were held prior to the introduction of the scheme, in which it expressed a number of concerns about the proposals. As a result of these concerns, the ALG decided to commission its own study to produce an independent assessment of the impacts of the CCS. This has been designed to both corroborate and complement TfL's monitoring programme through independent assessment of TfL's data own sets with additional independent surveys designed to assess more localised impacts of the scheme.

The ALG is directly involved in the scheme in that the Parking and Traffic Appeals Service, administered by the ALG, is responsible for hearing appeals on congestion charging penalties issued by TfL.

This paper contains an overview of the ALG's concerns about the scheme and TfL's proposed monitoring programme to the extent that they inform the decision to commission an independent monitoring study. The content of the ALG's monitoring study is presented and the preliminary results of the scheme are reviewed in the light of the ALG's concerns.

2. THE OBJECTIVES OF THE CONGESTION CHARGING SCHEME

The London congestion charging scheme (CCS) was introduced on 17 February 2003 and provides for a toll of £5 to be charged for vehicles moving within a central London zone from 7am to 6.30pm on weekdays. Buses, taxis, disabled drivers and electric vehicles are exempt from the charge and residents living inside the zone are entitled to a 90% discount.

Prior to the introduction of the CCS there were no stated objectives for the scheme, although statements were produced of the potential benefits and forecasts were made of the anticipated effects. The Mayor's decision to proceed with CCS was therefore based on an assessment that the overall effects of the scheme meant that it would be beneficial to London. Fundamental to that decision were the estimates that there would be:

- A reduction of 10 to 15% in traffic levels inside the zone measured in vehicle kilometres; and
- A reduction of 20 to 30% in vehicle delays (measured in time per kilometre in excess of free flow speed)

A difficulty which both the Mayor and TfL had to face in developing the CCS was that there was no comparable scheme of this size and type any where in the world that could be used to help predict what the impacts of the London scheme were likely to be.

The absence of any quantified objectives for the scheme makes the task of developing a monitoring programme more difficult. The programme that TfL have developed is designed to monitor the effectiveness of the scheme rather than determine whether the scheme has met a quantified set of objectives.

3. ALG VIEWS ON THE CONGESTION CHARGING SCHEME

There were four major public consultation exercises on the proposed CCS prior to its introduction. These provided the opportunity for the ALG and the London Boroughs to give their views on the proposals. The ALG's role was to formulate a response to each of these consultation exercises that took account of borough views. The nature of these concerns had an important bearing on the decision taken by the elected members of the ALG that a study to produce an independent assessment of the impacts of the CCS should be undertaken.

The key concerns raised by the ALG in its responses to the various consultation exercises and the extent to which these have been addressed to date are summarised in Table 1.

Table 1: Concerns raised by the ALG about the Central London Congestion Charging Scheme

ALG Concern	Extent to which issue has been addressed
That substantial and tangible improvements to public transport capable of taking any displaced journeys are introduced in advance of the scheme.	Issue partially addressed. Over 11,000 extra spaces (not seats) have been provided on bus routes to charging zone in the peak hour. ALG survey to assess level of overcrowding in May 2003.
The need to ensure that any extra traffic at the boundary does not increase congestion significantly and can be handled without detriment to the neighbouring roads in the area;	Issue partially addressed. A total of 131 borough led transport schemes to be funded in central and inner London. Uncertainty over funding for schemes not yet implemented. Preliminary monitoring results no increase in traffic levels at the boundary.
That the introduction of the congestion charging scheme will not simply transfer congestion to outer London.	Preliminary monitoring results suggest no increase in traffic levels in outer London. Further monitoring results are awaited.
That residents living inside the charging zone are treated fairly and exempted from payment or have a substantial discount.	Issue addressed. Residents inside zone entitled to a 90% discount.
The need to ensure that properly defined public service vehicles are exempted from payment.	Issue addressed. 100% Discount for London Borough operational vehicles.
The need to ensure that the timetable for the scheme allows for full consultation and consideration at all stages.	Issue addressed. Four public consultation exercises held.
The need for a discount for low paid public sector employees who work inside the charging zone.	Issue partially addressed. Discounts for NHS staff and fire-fighters in the course of their work.
That whereas a provision of an exemption	Issue not addressed.

for people with disabilities is desirable that the existing Blue Badge scheme should not provide the basis for granting an exemption because of the misuse and abuse of the scheme and the fact that Badges are issued to people rather than vehicles.	
That the scheme may have a negative effect on borough parking operations resulting from an increase in the number of people parking in the area just outside the zone and a decrease in the number parking inside the zone.	Issue to be examined as part of ALG study.

As shown in Table 1, the majority of the concerns that have been raised by the ALG have been either fully or partially addressed. Further monitoring results from TfL along with the outputs from the ALG monitoring study will be required to determine what further action, if any, will be required to address the ALG's concerns about the scheme.

One of the difficulties for the ALG in formulating its responses to the various consultation exercises was the differing stances adopted by the London boroughs towards CCS. For the most part individual borough positions were divided along party lines. The stance adopted by the majority of the boroughs controlled by either Labour or Liberal Democrat administrations was to support the principle of congestion charging whilst expressing concerns about the detail of the Mayor's proposed scheme. The Conservative controlled boroughs were opposed to the Mayor's scheme. The ALG's position, before the introduction of the scheme, tried to reflected these differing views. The ALG agreed to support the principle of the congestion charging whilst supporting boroughs that had concerns about the scheme.

In May 2002 Westminster City Council, who remain opposed to the scheme, made an application to the High Court for a judicial review of the Mayor's decision to confirm the Congestion Charging Scheme Order. This application was heard in the High Court between 15 and 23 of July 2002 and the outcome was that the application was refused.

4. TfL's CONGESTION CHARGING MONITORING PROGRAMME

TfL have developed proposals for a comprehensive five-year monitoring programme to measure the impacts of the congestion charging scheme in central London. The total budget for TfL's monitoring programme is believed to be £7 million.

TfL have recently issued their first impacts monitoring annual report, ('Impacts Monitoring First Annual Report', Transport for London, 2003). This document describes the monitoring programme, summarises conditions prior to the commencement of charging and sets out the range of indicators and issues being monitored following the introduction of the scheme.

The aim of TfL's impact monitoring programme is to achieve an understanding of the scheme impacts in the following seven areas:

- congestion;
- traffic patterns;

- public transport;
- travel behaviour and secondary transport effects (e.g. accidents, parking);
- economic impacts;
- social impacts; and
- environment.

The Impacts Monitoring First Annual report states that TfL's monitoring programme has been guided by the following principles:

- monitoring should robustly detect and characterise the main expected effects of congestion charging;
- monitoring should enable unexpected or anticipated effects to be determined;
- monitoring should seek to understand as well as measure;
- monitoring should seek to aim to meet the legitimate needs of all stakeholders for information;
- monitoring should provide best value.

As part of the process of developing the scope of ALG's monitoring study a number of potential shortcomings were identified from the London boroughs perspective with TfL's proposed approach to monitoring. This work was undertaken during 2002 and predated the publication of the Impact Monitoring First Annual Report. The issues that were identified at that time related to the coverage of the proposed programme, its objectivity, the choice of monitoring parameters and the absence any 'do minimum' comparison. Each of these issues is explored in the following sections.

4.1 The Coverage of TfL's Monitoring Programme

In developing proposals for its own monitoring programme the ALG was concerned that TfL's programme would measure all of the impacts of the scheme that were of concern to the London boroughs. A particular issue that was identified by the London boroughs that it was felt warranted more detailed investigation was the impact of the scheme on parking activity. The impact of the scheme on carers, motorcycle usage and motorcycle parking and Blue Badge and residents permit fraud were also identified as areas which might warrant more detailed investigation.

A second concern related to the scale of the coverage, which TfL may choose to adopt in presenting their results. There was the concern that TfL would produce results that related to quite large geographical areas given that they were more likely to be interested in the strategic impacts of the scheme. However, the boroughs would be more interested in the localised impacts, in particular those felt by local residents and businesses. For example, there was a concern that the results produced by TfL on traffic impacts might mask significant localised variations particularly where traffic levels might have risen due to 'rat running'. There was also a concern that the focus of TfL's programme would be on changes that have occurred in central and inner London even though the scheme might have effects that extended to outer London.

4.2 The objectivity of TfL's impact monitoring

There was the concern that TfL were effectively 'judge and jury' on their own scheme, therefore the ALG felt that it was important that some independent assessment of the impacts of the scheme was undertaken to corroborate the results produced by TfL.

4.3 The choice of monitoring parameters

One of the principles guiding TfL's is that 'monitoring should seek to understand as well as monitor'. However, much of what TfL are proposing to do is based on counts of vehicles or travellers. This raises two issues:

- Firstly, are the changes going to be sufficiently large to be assessed accurately, when compared with other changes taking place and the effects of daily or seasonal variation? The expected change in the number of train passengers is very small, and therefore changes due to CCS will be difficult to detect. For bus passengers the change in numbers may be more evident, although the effects of transfer resulting from CCS will not be readily separable from changes from train, walking or cycling, due to the improvements in service coverage, reliability and frequency of bus services.
- Secondly, counts alone will not detect 'churn', where motorists deterred by CCS are replaced by others who are attracted by the easier traffic conditions and are willing to pay the charge. If the current reason for using public transport is lack of parking then some travellers may take over parking spaces vacated by others.

It is unclear whether the surveys being proposed by TfL will be able to give a comprehensive enough account of behavioural changes, as only small area samples are being conducted. The most obvious way of collecting such data would be a household interview, similar to the London Area Transport Surveys (LATS) but this is very expensive. In particular it would allow more detailed analysis of the different responses by different groups in society, which would be valuable in assessing the effects on social inclusion.

TfL will be undertaking a comprehensive set of surveys in a boundary case study area located to the north of the inner ring road covering an area of the London Boroughs of Hackney and Islington. This case study will provide the opportunity to investigate boundary related issues and will allow consideration of the interaction between effects of congestion charging in a specific local area.

Another principle governing TfL's monitoring programme is that monitoring should robustly detect and characterise the main expected effects of congestion charging. A difficulty for TfL is the extent to which their monitoring programme will be able to distinguish between the effects that are due to CCS and those resulting from the other initiatives that are being implemented as part of the Mayor's Transport Strategy or the impact on travel patterns of general economic and social changes in London.

4.4 The absence of a 'do minimum' comparison

The methodology that is to be adopted by TfL to assess the impacts of the scheme will not involve a comparison of a 'do something' situation with a 'do minimum' scenario defining what would happen in the absence of the scheme. Such a comparison is normal practice in UK transport project appraisal.

Some measures causing change in London's transport system, such as the London Bus Priority Network and the London Bus Initiative, were commenced before the election of the Mayor and so, although adopted and continued as part of the Mayor's Transport Strategy, these are clearly changes that are not part of the CCS. Some changes, such as the provision of extra bus services in and around the central area to take the additional forecast load resulting from CCS, are obviously part of the CCS scheme. TfL have stated that CCS is an integral part of the Mayor's Transport Strategy and as a consequence, no 'do minimum' situation seeking to represent the situation without the introduction of CCS has been produced. It will therefore not be possible to disaggregate the effects of CCS that would have taken place in a 'no CCS' scenario.

The changes in traffic levels and bus patronage that were occurring prior to the introduction of the scheme give added weight to the argument that a 'do minimum' comparison should be undertaken. Traffic levels in central London have been falling for a number of years and at the same time bus patronage has been increasing. The CCS is expected to compound these effects but the extent to which it will be impossible to determine the extent to which it will have done so in the absence of a 'do minimum' comparison.

5 THE ALG MONITORING STUDY

The ALG decided to commission its own study to produce an independent assessment of the impacts of the congestion charging scheme to address some of the concerns that had been raised by the ALG about the scheme and some of the shortcomings of TfL's monitoring programme that had been identified.

5.1 The Scoping Study

Initially the ALG commissioned a scoping study to help determine what elements should be included in a study to produce an independent assessment of the impacts of the CCS. The scoping study was undertaken by Arup Transport Planning, in association with Hugh Collis, in autumn 2002.

In view of the ALG's concerns about the scheme and TfL's approach to monitoring, it was clear that any study undertaken by the ALG would have to contain corroborative elements to check TfL's results and complementary elements to provide more detailed investigation in areas of particular concern to the London boroughs.

The availability of funding was a key constraint and it was clear from the outset that it would not be possible for the ALG to consider collecting large amounts of original data as part of its study. At the time of preparing the Scoping Study, TfL had given an assurance that their data sets would be available to 'bona fide researchers'. Following discussions with TfL the scoping study proceeded on the basis that the TfL data sets would be available to the ALG for independent analysis.

A review of TfL's proposed monitoring programme was undertaken as part of the scoping study. A total of thirteen possible studies were identified for possible investigation following consultation with representatives from the ten central and inner London boroughs most affected by the scheme. The thirteen potential studies identified were as follows:

- independent validation of the changes in traffic flows in and around the charging zone;
- independent validation of the impact of the scheme on levels of congestion in and around the zone;

- a comparison of the strategic effects of congestion charging against a ‘do minimum’ scenario;
- analysis of the impacts on traffic level on parallel roads close to the Inner Ring Road;
- impacts on the use of public parking, tariffs and revenues both on and off street;
- impacts on compliance with parking restrictions;
- the usage of motorcycles and motorcycle parking issues;
- changes in the use of private non residential parking spaces;
- parking around railheads in outer London;
- impacts on carers;
- impacts of CCS on the use of residents permits, particularly fraud;
- impacts on CCS on the fraudulent use of Blue Badges;
- impacts on levels of overcrowding on buses.

Following further discussions with the 10 central and inner London boroughs on the relative merits of each of these elements and their likely cost it was decided to commission a study to produce an independent assessment of the congestion charging scheme consisting of five elements. A description of the content of each of these is included in the following section.

5.2 Content to the ALG Monitoring Study

In February 2003 a contract was let to Hugh Collis in Association with Paul Cullen to undertake an independent study to assess the impacts of the congestion charging scheme. The study will consist of the following five elements:

i). Independent validation traffic flows in and around the congestion charging zone

This element of work was included to address the concern that had been raised about the objectivity of TfL’s monitoring programme. A database model will be set up to compare the change in vehicle kilometres travelled inside the zone and an area immediately outside it before and after the introduction of CCS. The model will use traffic count data from TfL’s data sets from October 2002, which will be compared with data from October 2003.

ii). Traffic parallel to the inner ring road

Again this study was included to provide an independent check on the results that TfL will be producing and to provide a more localised assessment of the impacts of the scheme. This will consist of an independent analysis of traffic count data collected by TfL and the London Boroughs on a number of screenlines to detect whether there has been any change in the number of vehicle using parallel routes.

iii). Impact on public on and off-street parking in and around the zone

This study was included to address the concern about the potential impact of the scheme on parking activity and parking revenue. This study will examine changes in the level of parking activity to determine whether there has been a decrease in parking activity inside the zone and an increase in the area immediately outside the zone. The study will use on and off street parking revenue return data from the London

boroughs. It is also hoped to obtain some data from private car park operators to complement this.

iv). Parking at stations in outer London

This study was included to address the concern that the introduction of the scheme could result in an increase in the number of people parking at stations in outer London. This study will compare the level of parking activity at six stations in outer London to determine whether there has been any increase in the number of vehicle parking following the introduction of the scheme. Before data was collected in January/February 2003 and the surveys will be repeated in the equivalent weeks of 2004. This study will complement the work that TfL will be undertaking, which will consist of platform interviews with passengers to determine whether passengers have changed their journey patterns and whether they have started to park and ride.

v). Bus occupancy surveys

One of the key concerns raised by the ALG was that sufficient public transport improvement should be in place prior to the introduction of the scheme. A question remains over whether the number of additional spaces (not seats) that have been provided will be sufficient to cope with the increase in demand. In May 2003 surveys of bus occupancy on 34 routes at ten locations on the boundary of the congestion charging zone were undertaken in the morning peak to determine the levels of overcrowding. The methodology used was the same as that used by London Buses to assess occupancy levels. This survey was included in the study in direct response to the concern that had been expressed by the ALG and the London boroughs as to whether the increase in the number of spaces provided on buses would be sufficient to satisfy the increase in demand following the introduction of CCS.

The report on these studies will be available in March 2004. The constraints on the financial resources available for the study meant that hard decisions had to be made about which elements should be included in the main study. The study to produce an independent evaluation of the impact of the scheme on levels of congestion and the comparison of the strategic effects of congestion charging against a 'do minimum' scenario were both excluded on the basis that each would have absorbed all of the budget available for the study although they were considered to be a high priority. Other possible study elements were excluded on the basis of the relative priority that was attached to them following discussions with the central and inner London boroughs.

6. INITIAL IMPACTS OF THE CONGESTION CHARGING SCHEME

TfL have stated that it will not be possible to draw any firm conclusions about the scheme until it has been operating for at least six months. To date TfL have produced some data on the preliminary impacts of the scheme. At the time of writing the latest assessment was given in the report to the TfL Board on the 28 May 2003 ('Congestion Charging Update', Report to TfL Board 28 May 2003) giving an update on the scheme. The preliminary impacts on the areas which the ALG expressed concerns about (traffic and public transport) are set out below. An analysis of the current situation with regard to appeals against penalty charge notices is also presented, as it is the Parking and Traffic Appeals Service, administered by the ALG, which is responsible for deciding these appeals.

6.1 Impacts on traffic

The report to the TfL Board on 28 May 2003, giving an update on the CCS states that:

- total traffic entering the zone across the charging day has declined by 20%;
- total traffic circulating inside the zone (excluding two wheelers) has declined by 16%;
- traffic on the inner ring road has remained at pre-charging levels; it had been predicted to increase by 10%;
- there is no evidence at this stage of any displaced traffic finding its way to other orbital routes around the charging zone;
- indicative analysis of sample speeds indicates that there has been an increase in traffic speeds in the charging zone;
- there has been a 14% decrease in the journey time of longer distance trips from London into the charging zone.

These impacts are broadly in line with those that were forecast before the introduction of the scheme. To date there appears to be no evidence of additional congestion at the boundary or of traffic using alternative parallel routes.

It is interesting that so far there seems to be no discernable reduction over time in the proportion of motorists deterred from entering the zone by the charge, which appears to be constant at about 20% of total traffic. The work of Mogridge, M. (1985) on the Thomson proposition¹ and of Cairns, S, Hass-Klau, C and Goodwin, P, (1998) on highway capacity reductions would suggest that, over time, the capacity released by deterring some motorists would be occupied by others. Extending these studies to congestion charging would give the expectation that perceived journey cost has little effect in these conditions as there would be someone prepared to pay the higher price to take the place of motorists who are deterred by the charge. If the reduction in demand is sustained it would be worth revisiting these studies, as it would appear that the charge is sufficiently high that sufficient demand is suppressed by price that there is now no demand suppressed by relative journey time considerations.

6.2 Impacts on public transport

The report to the TfL Board on the 28 May states that:

- bus patronage to the charging zone has increased by some 6,000 passengers compared to Autumn 2002. This includes the effect of underlying patronage increases. Bus ridership is increasing by 12% per annum across the network as a whole;
- the number of buses to the zone has increased by 19%;
- the level of bus kilometres not operated due to traffic congestion fell by half for routes into the charging zone;
- bus speeds remain above those for 2002 inside the charging zone;
- the excess waiting time – the additional wait forced on passengers through service irregularity – has fallen by one third for routes into the charging zone;

- the average passenger waiting time for buses on routes into the charging zone has fallen from 6.0 minutes to 5.0 minutes;
- there has been an increase of 17,000 passengers on the underground network, an increase of 0.6%.

These changes are in line with those that were forecast before the introduction of the scheme. As yet TfL have not produced any data on the level of overcrowding on the public transport system. One of the ALG's key concerns was that sufficient public transport improvements were in place before the scheme commenced. Although it is clear that the bus service operations have improved in terms of journey times and reliability, the results of the ALG survey of bus occupancy undertaken in May 2003 will provide an assessment on levels of overcrowding.

6.3 Appeals

The ALG administers the Parking and Traffic Appeals Service (PATAS) which provides the independent adjudication service for deciding disputed parking and bus lane penalties charged by London Boroughs and TfL and congestion charging penalties issued by TfL. The first congestion charging hearings by the independent adjudicators were held in the week beginning 14 April 2003. Figures showing the status of the congestion charging appeals received by PATAS up until the 30 May 2003 are shown in Table 2.

Table 2: Congestion Charging Appeals to 30 May 2003

Appeals	Number
Received	6911
Decided	3266
Allowed (found in favour of appellant)	2930
Allowed appeals uncontested by TfL (incorporated into total allowed):	2408
Refused (found in favour of TfL)	336
Withdrawn by appellant:	14

Source: Parking and Traffic Appeals Service (2003)

Prior to the introduction of the scheme, it was anticipated that there would be 7000 congestion charging appeals per year. A high number of appeals were received in the initial period after the scheme commenced which reflected the problems with the representations and appeals processes being carried out by TfL's contractor Capita. Improvements have been made to these processes, which should reduce both the number of appeals and the number uncontested by TfL. The figures show that of those appeals contested by TfL since hearings commenced 39% were refused (i.e. found in TfL's favour). Of the parking appeals heard by the Parking and Traffic Appeals Service in 2001/2, 48% of those appeals that were contested by the London borough were refused (ALG Transport and Environment Committee, Annual Report 2001/2002). The impacts of the changes that TfL have made to their processes are not yet apparent in the figures shown in Table 2. As with other aspects of the scheme, performance monitoring will have to take place over a longer period of time before any conclusions can be drawn about the effectiveness of the operation.

7 CONCLUSIONS

The Central London congestion charging scheme has been implemented generally with reasonable success (on the basis of evidence so far) and preliminary monitoring results indicate that it is delivering reductions in traffic levels and improvements in the operation of bus services. It will take at least six months before any firm conclusions can be drawn about the impact of the scheme. The ALG has expressed a number of concerns about the scheme and TfL's approach to monitoring its impacts. Constraints on the level of resources available to the ALG has meant that it has not been possible to address all of these concerns in the ALG's monitoring study. Nevertheless, the ALG monitoring study is the only independent assessment that is being undertaken and despite its limitations, it will provide a useful complement to the comprehensive study being undertaken by TfL.

Notes

¹In conditions of suppressed demand the speed of the road network is determined by the speed of the high-capacity network (rail, bus etc). J. Michael Thompson, LSE, 1977.

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