

Appendix A

Table A.1 Predicted effects of congestion charging on traffic (*Disbenefits in italics*)

(Congestion charge: £5 area licence for Central London; Source of effects on traffic: RCOL report¹)

	£5 area licence, Central London		£5 area licence, Central London plus Revenue spent on 60p bus fare and 10 high quality Inner – Central London bus routes	
	Central London	Inner London	Central London	Inner London
<p>Volume of traffic Baseline 7million personal trips in Greater London by private vehicle each weekday 07.00–19.00 Of those who choose not to pay licence, >50% switch to public transport; 5% change time of travel; 5% do not make the trip; others share car or walk or cycle.</p>	<p>Car traffic: 20% fall in morning peak travel (vehicle-km) 23% fall in 14-hour travel 35% fall in trips Baseline: 1million trips</p> <p>Overall: 10% fall in morning peak travel (vehicle-km) 12% fall in 14-hour travel (similar to reductions in main school holiday periods)</p>	<p>Car traffic: 5% fall in morning peak travel (vehicle-km) 6% fall in 14-hour travel Baseline: 3million trips</p> <p>Overall: 3% fall in morning peak travel (vehicle-km) 3% fall in 14-hour travel ↓ on main radial roads but <i>5-10%↑ on Inner Ring Road & other orbital routes</i></p>	<p>Car traffic: 40% reduction in trips to the central area</p> <p>Overall: 12% fall in 14-hour travel (= core scenario)</p>	
<p>Average speed of traffic (including junction delays)</p>	<p>Increase from 15 to 18km/hr in morning peak and 16 to 18km/hr in 14hr average</p>	<p>Increase from 21 to 22km/hr in morning peak and 22 to 23km/hr in 14hr average (similar to average speeds in the early 1980s)</p>	<p>No additional change</p>	
<p>Journey times and reliability</p>	<p>Saving of 4-5 minutes per trip within the charging area. Some improvement in journey time reliability</p>	<p>Saving of 2-3minutes on a 10km journey into central London and 1-3minutes outside the charging area. Some improvement in journey time reliability</p>	<p>10% improvement in the speed of all bus services</p>	

	£5 area licence, Central London		£5 area licence, Central London plus Revenue spent on 60p bus fare and 10 high quality Inner – Central London bus routes	
	Central London	Inner London	Central London	Inner London
Effects on public transport Baseline 5million trips each weekday 07.00–19.00 Of those who choose not to pay licence, >50% switch to public transport	<i>Increased overcrowding: 7% increase in public transport passenger trips: 3%↑ in rail, 1%↑ in underground & 2%↑ in bus trips in morning peak</i>		10,000 (1% increase) additional passengers	
	Faster journey times for buses (esp Central London) but less than the general reduction in travel times because of waits at bus stops and bus lane / bus priority measures already reduce the effects of congestion Increased reliability (esp Central London)		Bus trips into Central London rise from 70,000 to 90,000; Underground trips fall from 460,000 to 450,000 Rail trips unaffected, remain elevated above baseline at 430,000	
Road capacity	Failure to re-allocate space could either: generate income but <i>reduce the benefits of congestion charging if the vacated space were then occupied by new drivers</i> or <i>allow fewer vehicles to travel faster along the emptier roads.</i>		Re-allocation to buses will improve reliability & frequency of services Re-allocation to pedestrians and cyclists can encourage greater use of these modes, since perceived danger is a major barrier to these modes.	
Business 20% of all commercial vehicle movements starting within Greater London enter Central London each weekday 07.00–19.00	Benefits of reduced journey times and increased reliability for commercial vehicles valued at £80m–120m pa. <i>ROCOL assumes goods trips unchanged, so £70-80m charges paid pa.</i>		Benefits of reduced journey times and increased reliability <i>ROCOL assumes goods trips unchanged, so charges paid</i>	
Economic effects per year	Public transport gains £5–10m Commercial vehicle operators gain £20-55m Charging authority, transport operators, government gain £185–220m <i>Car occupants lose £100m</i> Net benefits valued at £125-210m			
Effects on car users across London by income group	Low income: £1-2m benefits <i>no losses</i> Medium income: £ 6–10m benefits from improved journey attributes <i>but £14–17m financial loss</i> High income: £19–31m gain from improved journey times and reliability <i>but £55–85m financial loss</i>			

Table A.2 Predicted effects of congestion charging that may affect health (*Disbenefits in italics*)

(Congestion charge: £5 area licence for Central London; Source of effects on traffic: ROCOL report¹)

	£5 area licence, Central London		£5 area licence, Central London plus revenue spent on lower bus fares and bus service improvements	
	Central London	Inner London	Central London	Inner London
Road capacity Decisions on road re-allocation influence many potential health effects:	Failure to re-allocate space could either: generate income but <i>reduce the benefits of congestion charging if the vacated space were then occupied by new drivers or increase severity of injuries if reduced numbers of vehicles travelled faster.</i>		Re-allocation to buses will improve access and equity and reduce noise and air pollution per passenger-km. Re-allocation to pedestrians and cyclists can encourage greater physically active transport.	
Injuries	Reduction in collisions valued at £15-25m pa (=3% of annual road traffic collisions in London) Possible problem of increased average speed: perhaps fewer injuries but greater severity? Some (?most) of reduced journey time due to reduced time at junctions rather than increased vehicle speed, so may not affect injury severity. Effects greater in Central than Inner London		Injury rates per trip or per km lower for users of public transport than other forms of transport. Number and severity of injuries may improve further, as fewer trips made by car, but vehicle-km unaffected so may not affect injuries.	
Access to good, services, and people	Benefits outweigh disbenefits overall, especially for disadvantaged groups (<i>except low income essential car users</i>)		Improves further, especially for non-car users	
Air pollution NB: PSV, taxi and L/HGV trips not reduced. These are the main polluters.	ROCOL model shows minimal effect on background NO ₂ or PM ₁₀ levels. Fall in volume & increase in speed may reduce NO ₂ levels a little alongside the busiest roads in Central London. PM ₁₀ levels may fall if commercial vehicle traffic reduces. CO ₂ production should also fall by 3% in Greater London		Smoother bus journeys (reduced congestion) should further reduce emissions	
Noise pollution	Small reduction	?minimal effect	?minimal additional effect	?minimal effect
Community severance	Should reduce	?minimal effect	Greater reduction	?small effect
Physical activity	Depends partly on road re-allocation, etc.		Depends partly on road re-allocation, etc.	
Equity (See above for car users by income third and below for other groups)	Improvement in equity, <i>except for small group of low income car-owners who need to drive within the charging area</i>	Some improvement in equity.	Larger improvement in equity, <i>except for small group of low income car-owners who still need to drive within the charging area.</i> Improvement in access to goods, services & social networks, leading to improved health and well-being and reduced social exclusion.	

The effects for disadvantaged and vulnerable groups would be similar but with certain specific differences. The effects on disabled people with 'Orange badges' would be minimal if badge-holders were exempt from the charge. Access and quality of life could improve if congestion eased. For other disabled people, if money raised by congestion charging and spent on public transport included improving access to public transport for the disabled (for example low-floored buses, installation of lifts and ramps in stations), the health effects would be positive.

Children, older people, women, those from Black and minority ethnic groups, and with low income, including the unemployed, have much lower access to car use than average and are more dependent on walking and public transport, particularly buses. The main benefits would be an increase in equity if personal use of private cars diminished and public transport and facilities for safe walking and cycling improved. These groups also spend an above average proportion of their household income on transport. Women and people on low incomes are particularly susceptible to issues of affordability. Continuance of schemes for reduced fares or free transport for older and unemployed people plus use of the income generated to reduce fares would improve equity and health.

However, car users in these groups, particularly the disabled, older people and other low income groups, may find congestion charging difficult to afford yet find it difficult to manage other forms of transport, for example because of disabilities or the need to carry a number of children plus shopping. ROCOL predicts a 50-60% reduction in home-based car trips to the Central London charging area by those in lower- and medium-income households (compared with a 20-25% reduction for those in the top third of household income, 20% reduction for households with at least two cars, and a 15-20% fall for employer-assisted trips).¹ Improved availability of options avoiding car use (such as home deliveries, improved and more accessible public transport, and better facilities for pedestrians and cyclists) will help to minimise the number of people disadvantaged by congestion charging.

Improvements in access to, reliability, or cost of public transport and reduced bus journey times could also help some of those who currently use a car to use it less. Households in the lowest quarter of income make 56% of their motorised journeys by public transport, of which 44% are by bus. They would gain considerably if charging revenues were used for better and/or cheaper public transport. Investment in public transport can reduce transport injuries overall², reduce problems of loneliness, isolation, and exercise tolerance³ and enhance access.⁴

References

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