

7. Edinburgh

Following last year's consultation, the project to develop the congestion charging option comprising an outer and inner charging cordon has received the support of City of Edinburgh Council and "Approval in Principle" from the Scottish Executive.

Proposals for the scheme, which is likely to be ANPR based, are now being developed:

- The scheme will operate Monday – Friday.
- The first inbound movement by a vehicle through any of the cordon crossing points will incur the £2.00 charge per day.
- The inner cordon will operate from 7.00am to 6.30pm and the outer cordon from 7.00am to 10.00am and again from 4.00pm to 6.30 pm.

A Public Inquiry is now necessary and this is likely to take place during summer 2004 with a decision from the Reporter likely in October 2004. A referendum will also be held, probably late in 2004, giving the citizens of Edinburgh the final say on whether congestion charging should be implemented. If the response is favourable, the scheme could be introduced in 2006.



Edinburgh – looking at an end to congestion?

During 2002 several ANPR systems were tested at two city centre sites and the behavioural aspects of operating the retail system using volunteers were assessed. Initial indications are that the technology will be sufficiently accurate to aid the operation of a credible charging scheme.

PROGRESS report

Scheme design work is reaching completion in many cities, although modelling and other specification activities are continuing. Work on social, economic and political issues, including consultation, stakeholder management, and building support continues across the cities. Evaluation, which is being undertaken at most sites, is being boosted by the availability of the results from city trials. This year, trials have been underway in Copenhagen, Gothenburg, Genoa, Edinburgh, Rome and Bristol. Further modelling work has taken place in Helsinki, and Trondheim is proceeding with its plans to implement a city centre toll ring.

As the project moves into its final year, the results will be published in the publicly available reports "Demonstration Implementation Report" (August 2003), "Practical Implementation Guide for Cities" (February 2004) and "Social, Economic and Legal Frameworks" (March 2004). The final ProGR•SS report is due for publication in May 2004.

EUROPEAN DEBATE ON CONGESTION CHARGING



"Congestion charging is a way forward, and the current experiences have the benefit of not only reducing congestion, but placing transport and mobility in cities at the heart of the political debate." These were the broad conclusions of a Round Table addressing the problems of congestion which was held in Brussels in the spring. It was organised by Polis, the cities and regions network promoting innovation in transport, and the Council of European Municipalities and Regions (CEMR).

For further details, please contact: shoadley@polis-online.org or patrizio.fiorilli@bxl-ccre.org

Sorrento's Story

On April 26, 2003 the Southern Italian city of Sorrento (population 16,459) launched an innovative scheme combining an access restriction zone (ZTL) and road pricing scheme in the historical centre (see figure 5). Unlike previous experiments, the new design calls for:

- access restriction within part of the ZTL (the main central avenue and square) for all vehicles,

including public transport and mopeds, but excepting bicycles and electric mopeds;

- a charge on all vehicles accessing the rest of the ZTL (the port area).

The scheme is designed to make the area a pleasanter place to live during the highly congested night hours; the ZTL is operational from 19:00 to 02:00. Road users

wishing to access the area can purchase the •1 tickets in 40 city-wide ticketing agencies and must exhibit them for scheme enforcement (by the municipal police, traffic auxiliaries and the national guard). Each ticket is valid for one entry only and residents are exempted.

The scheme will be provisionally in force from April 2003 to October 2003.



Figure 5 the site of Sorrento's proposed LZT

London - The Facts and the Figures



Following two rounds of public consultation, Transport for London (TfL) introduced on 17th February 2003 a congestion charging scheme based on area licensing in London. The scheme is expected to raise more than £1.3bn over 10 years, which will be re-invested in London's transport infrastructure.

The £5 charge per vehicle per day applies to a 21 km²

cordon from 7am – 6.30pm, Mondays to Fridays. Payment can be made up to midnight on the day of the journey via a mobile phone text messaging service or the internet, at retail outlets and self service machines, and by telephone and post. A £5 surcharge is levied on payments made between 10pm and midnight to discourage late payments. Fast track payment using a credit-type card which holds personal details and vehicle registration protected by a PIN number is also available.

Exemptions and 100% discounts from the charge are available for motorcycles/mopeds, Hackney Carriages, emergency service vehicles, buses, blue badge holders and alternative fuel vehicles. Residents within the

charging zone are entitled to a 90% discount.

A survey of all vehicles coming into the charging zone during late February and March showed an overall reduction of around 20% compared to the equivalent period in 2002. The number of cars entering the charging zone reduced by around 30% compared with the last few weeks before charging, and by 38% compared with the equivalent period in

2002. The reduction in traffic inside the charging zone, taken from sample traffic counts conducted in the weeks immediately following the introduction of charging, showed a 16% reduction compared with the equivalent period in 2002.

For further details, see www.cclondon.com and www.tfl.gov.uk/tfl/pdfsdocs/congestion_charging/cc-three-month-report.pdf



Conference: Road Pricing - The Way Forward

A practical look at the design, implementation and operation of urban transport pricing projects, based on the 4-year PRoGR•SS demonstrations.

Institute of Physics, London
Tuesday 24th -
Wednesday 25th
February 2004

The Road Pricing – The Way Forward? conference is being held at the end of the four-year CUPID and PRoGR•SS projects. It is aimed at local authority personnel seeking the latest state of the art information on urban transport pricing schemes and wishing to benefit from the lessons learnt by the 8 European cities involved in demonstrating a range of road user charging technologies and plans – Bristol, Copenhagen, Edinburgh, Genoa,

Gothenburg, Helsinki, Rome and Trondheim.

The programme will include workshops run jointly by CUPID and PRoGR•SS partners on practical aspects of the design, implementation and operation of urban transport pricing projects:

- Scheme development
- Modelling
- Operational issues
- Technologies
- User acceptance

Keynote speakers include Ken Livingstone (Mayor of London), Eric Sampson of the UK's Department for Transport and a representative of the European Commission.

For further details, please contact: lucinda.brown@ttr-ltd.com

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Pricing Urban Transport

Issue No. 6 September 2003

Welcome to the sixth issue of the European Transport Pricing Initiative Newsletter

CUPID Update

Work is now underway on the Final Report which will include a Europe-wide evaluation of urban road pricing, based mainly on results from the PRoGR•SS cities, but also from other developments such as London and Stockholm. The evaluation will help in drawing up recommendations to support the implementation of future road pricing schemes throughout Europe. The recommendations will be based around a set of 15 questions covering both scheme definition issues, such as 'How much should be charged?' and 'Who should be charged?' and implementation process issues such as 'How can opposition be overcome?' and 'What can be learnt from previous attempts to introduce road pricing?'

CUPID organized two workshops this year in Genoa and Copenhagen. These included presentations on the technology trials being run in Bristol and Genoa, the consultation activities of Edinburgh and Trondheim and the new road pricing scheme approved for Stockholm.

The CUPID-PRoGR•SS final conference is to be held from February 24th - 25th 2004 in London. Turn to page 6 for further details of the event, which can also be found on the CUPID website at www.transport-pricing.net

Conference papers have been given at a range of international events including ECOMM, ITS 2003 and The International Symposium on the Theory and Practice of Congestion Charging, in London.

ROAD PRICING Evaluating Social Impacts



Road pricing may contribute to a better urban environment

The Swedish National Road Administration recently commissioned Transek AB to produce an overview of current knowledge on Urban Road Pricing. One of the most frequently discussed issues addressed in the report is the distributive effect of a road pricing scheme on different income groups. Some of the arguments are:

1) *People with high incomes suffer more than those with low income:* Those on a high income drive more frequently, and are more likely to travel to the inner city. They are also more likely to live within or close to the inner city and therefore cannot avoid the charges or choose alternative routes.

2) *People with low incomes suffer more than those with high income:* Those on a low income have less opportunity to make decisions about the hours they work, and thus cannot avoid charges levied during peak hours. They are more likely to live far from the city centre and their destination is more often located outside the inner city where public transport is poor. Those with small economic margins suffer most from the charges.

3) *Those with high incomes gain the most from road pricing:* For those with a high income time gain is worth the charge. If road investments were not to be financed by charges they would have to be financed by income taxes, and since those with high incomes pay more tax they would suffer more. At the same time, they have a better chance to pay the charge since they have a higher disposable income.

4) *Those with low incomes gain the most from road pricing:* Those with low incomes often use public transport, and are therefore less affected by the charges, but can still profit from the revenue if it is spent on improving public transport (as is generally proposed for at least part of the revenues). Road pricing also slows down the development towards a more car-dependent society; this favours those on low incomes as they are less likely to have a car.

In the studies undertaken so far on this issue (e.g. San Francisco, Oslo, Gothenburg and Stockholm), those with high incomes appear to be most affected, since they more often drive a car and are more likely to live in areas with poor access to public transport. This is also confirmed by a recent study undertaken for Stockholm, where a full scale trial is being launched by the end of 2004. The report concluded that the usage of revenues in the scheme is crucial. If revenues are split alike or used for public transport the winners are the low income groups or low-frequent car-users, as in point 4). If however revenues are used to reduce tax-levels then high income groups gain the most, as in point 3).

More information can be found in the report which is available at www.transport-pricing.net/download/swedishreport.pdf

Johanna Lindqvist Dillén (e-mail: johanna@transek.se), Mattias Lundberg, Jonas Eliasson, PhD of Transek AB

Who are the winners or losers from road charging schemes?



For more information on CUPID, PRoGRESS and urban transport pricing issues visit www.transport-pricing.net

1. Bristol

The PRoGR•SS demonstration team in Bristol is now focusing on a technology trial which will test the effectiveness of Mobile Positioning Satellite (MPS) systems and enforcement issues using Automatic Number Plate Recognition (ANPR) cameras.

The trial will use 3 different methods to test the technology:

- Corridors: This method will investigate distance based charging along sections of roads.

The PRoGR•SS team is working with the UK national Government to trial the technology for the distance based lorry charge, and to explore its use as part of an urban charging scheme. A particular area of interest is the role which MPS systems may play in road pricing.



The trial is due to run between September and December 2003. Volunteer vehicles will be fitted with On Board Equipment (OBE) that calculates their position from the MPS satellites, and then communicates this information via the mobile phone network to a control centre. Every time a vehicle passes a charge point a charge mark is allocated to that vehicle. Should communications between the OBE and the control centre fail, the OBE has a smart card that can store up to 50 charge marks.

- Zones: This method will be used to define the proposed city centre scheme. There will be two cordons, an inner and an outer one with a distance of 200 metres between them. The vehicle will only be charged once it has passed both the outer and then the inner cordon. Although MPS equipment can have an accuracy reading of 10 metres, 200 metres has been chosen to be on the safe side.

- Virtual Gantries: This method will be used on the charging entry points to assess the number of vehicles using each of these gateways.

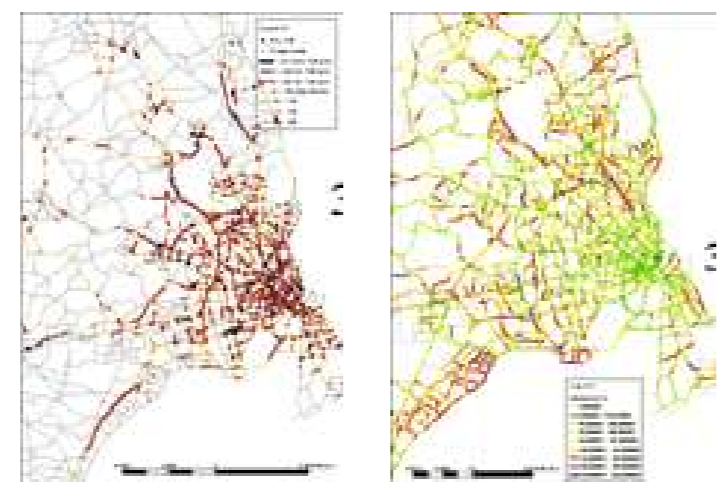
The results of the trial will be available in early 2004.

2. Copenhagen

The Copenhagen trial - testing road pricing with real money - is drawing to an end. The trial involved 500 drivers (participating for a minimum of 4 months) using GPS based equipment installed in their cars. The equipment registered the car's position every second and this information was used to calculate the cost of the kilometres driven in two different types of trials. One with km charges and with 11 virtual zones and charges for crossing zonal borders. The data is now being analysed by the Copenhagen team; it is expected that they will be able to publish the first results in just a few months. It is already clear that the technology worked well.

The map on the left below shows (in red, blue and black) the congested parts of the roads; the map on the right shows the same area of Copenhagen; the green roads indicate where the average speed is much below legal limits and the red and blue roads where the average speed is above the legal limit.

Figure 1: Road congestion in Copenhagen



One benefit of the trial has been that the collected data has proved to be very useful for other purposes in addition to the road pricing test. It has, for example, been possible to gather substantial information about the average speed driven on all major roads in the Greater Copenhagen area. This will lead to substantial revision of the speed information attached to each road in the digital maps. The speed data is important as it is used in both trip planning and traffic models. It has become clear that the average speeds used for central Copenhagen are too high and in general too low in the more peripheral areas. Another benefit of the trial has been a clear view of where congestion problems arise in the Greater Copenhagen area.

3. Gothenburg



In-car unit as used by the trial drivers

Gothenburg's field trial as part of PRoGR•SS is complete. 240 test drivers participated in the five rounds of the trial and on-board units as well as user attitudes towards road user charges have now been evaluated.

The feedback from these groups show that:

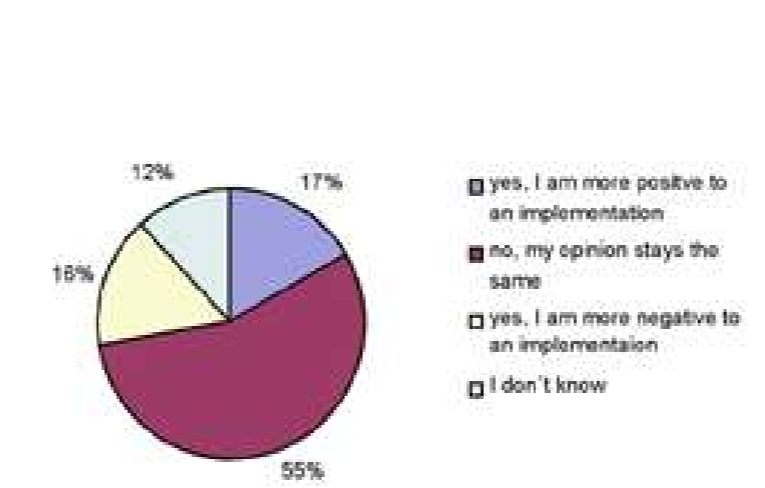
- Approximately 20% of the contacted drivers actually installed equipment.
- The GPS/GSM technology required continuous development and surveillance.
- There were repeated problems with the repeated lack of connection at call-up. Development of the software solved the problem.
- Software bugs resulted in power failures caused by a short circuit in the central unit and unit fallout. When problems with beeping equipment were experienced, the power function of the equipment was upgraded.
- Only 15% of the test drivers stated that they felt under surveillance.
- A few test drivers tried a newly developed parking application.
- The project has attracted considerable interest from the press, media, politicians, experts, students and the public.

Feedback from the questionnaire survey indicated considerable support for further investments in roads as well as in public transport, in order to improve the traffic situation in Gothenburg.

Only 10% of the general public believe that charges will improve the situation. 60% of the test drivers expressed the view that road pricing can be justified if there are improvements to the environment or public transport.

17% of the test drivers viewed the prospect of a real road pricing implementation in Gothenburg more positively after the trial, while 16% viewed the prospect more negatively (see figure 2).

Figure 2: The results to the question "Has your opinion towards the implementation of a real road pricing scheme in Gothenburg changed after your participation in the trial?"



4. Helsinki

The main work of the Helsinki PRoGR•SS project is now over. The results of the modelling exercise and the acceptability study conducted amongst the general public are available, and an additional small-scale face-to-face survey with local authorities and politicians is also complete.

The feedback from these surveys (see figure 3) indicates that many people believe road pricing to be an effective tool for transport management. Some 40% of the general public in the Helsinki Metropolitan Area agreed that road pricing should be introduced now or in the future and 60% did not want to see it introduced at all. People living in Helsinki expressed greater support for road pricing than those living outside the city. The authorities and politicians believe that by 2020 pricing will be a reality. Both authorities/politicians and the general public favoured earmarking the revenue for local transport development.

One of the key tasks for the near future is to develop a preliminary

action plan to address the implementation of an urban pricing scheme. This will include an assessment of how the results from the PRoGR•SS project can best be used and the identification of future planning/development needs, including technical, operational, institutional and legislative issues.

In spring 2003, a national parliamentary election took place in Finland. Although the political balance changed, the attitude of the new government towards road pricing is as yet unknown. As the level of infrastructure financing is a constant key issue of discussion, the road pricing debate will continue, stimulated by the recent decision in Stockholm to implement a full scale urban charging system for a trial period.

IMPLEMENTATION OF ROAD PRICING 3/4
The statement I support most

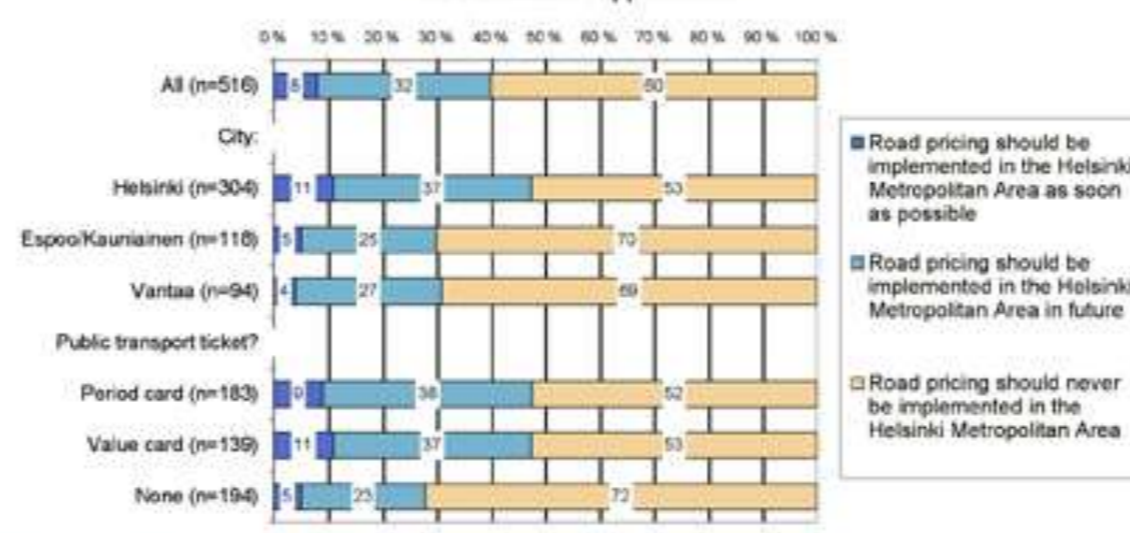


Figure 3

5. Rome

In the 18 months of its operation, Rome's joint Access Control System and Road Pricing (ACS+RP) has proved itself to be a very effective demand management policy - and a success story. It has achieved a 20% reduction in traffic flows as well as a 6% increase in public transport usage.

Now the Rome project is looking forward to the future. Introducing different road pricing conditions in the Limited Traffic Zone (LTZ) within the current operational time of the ACS+RP would not lead to substantial changes in terms of overall modal split. This is because only a small percentage of the vehicles currently accessing the area can be charged. The next step is therefore to test the simulations already carried out for a RP scheme in the evening.

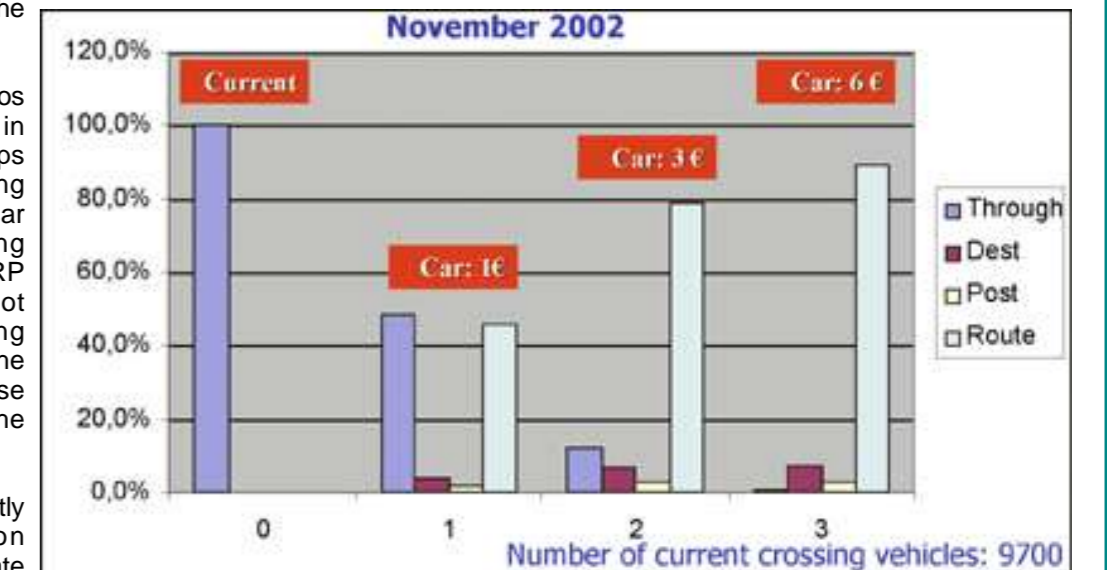
"Morning" and "evening" scenarios are completely different: early in the day regular, consistent trips dominate, while in the evening most of the trips are less regular - for leisure or for shopping purposes. So the joint ACS+RP scheme in the morning is not appropriate and the evening scheme will be pure RP, with the main task being to reduce those vehicles which simply cross the area.

The Rome Administration recently approved a demonstration involving a user panel to evaluate

the needs for large scale application of the RP evening scheme. Infrastructure investments will be limited to software procedures and support for the pricing system during the evening hours to be integrated in the system, without a change in the management of the current ACS+RP.

A different mix of access control and pricing could offer possible solutions to traffic problems elsewhere: other Rome zones (San Lorenzo, Trastevere, Villa Borghese) seeking to combat transport problems are now asking for similar systems.

Figure 4: Change of trips crossing Rome LTZ with evening RP scheme



6. Trondheim

The urban tolling system in Trondheim is providing much of the funding for the Trondheim Package, which is mainly a road construction package. The Package is an agreement between the state and the City Council, with the City covering 60% of the investment and the state financing the rest. The urban tolling system in Trondheim, which has been revised several times since it was opened in October 1991, will get its final revision on 1st November 2003.

The income from the existing tolling system was too low to finance the final project in the Trondheim Package, the Northern Bypass. So in October 2001 the City Council approved an extension to the toll system to include a new inner tolling around the city centre. As this is a joint enterprise between central and local governments, the plan needed the sanction of the Norwegian Parliament. This has been a difficult process, but after several setbacks an agreement was reached on 18th June this year.

The inner tolling is a part of the PRoGR•SS demonstration in Trondheim. It will be implemented just in time to be included in the project, to the great satisfaction of the PRoGR•SS team in Trondheim.

The existing urban tolling system in Trondheim will be terminated by the end of 2005. The question of what to do with the road user charging infrastructure after 2005 is a very controversial political issue. Several ideas have been discussed, such as using the RUC system as an access

control system for vulnerable areas in the city and/or for collecting parking fees. It is hoped that the analysis done as part of the PRoGR•SS project can provide valuable input to the difficult discussions coming up. This will certainly be one of the most important issues for the new City Council elected in September this year.

One of the minor toll plazas in Trondheim

