

Inquiry into road access pricing

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Responses to further questions

4 June 2013

1. You mention that one approach to road pricing would be to convert part or all of the current motor registration charges to distance based charging. Could you explain how charges based on distance would be measured?

Charges on motorways would be charged just as they are now charged on distance-based tollroads in Sydney (Westlink M7) and Melbourne (Eastlink). The point of entry to the motorway would be recorded, as would be point of exit from the motorway. The distance travelled on the motorway would be calculated and the charge per kilometre applicable at that time would be applied to that distance to calculate the trip charge.

The time taken for the vehicle to travel from the point of entry to the point of departure would also be measured. Since the distance between the two points is known, the average travel speed between the two points can be calculated. If that average travel speed falls below the nominated minimum speed (say 60kph), the charge would be waived in full.

In this way motorists would not be charged for congestion caused by “missing links” or road incidents.

2. In your submission you present a model to address congestion in major cities known as the Safe Arrival on Time charge (SAT). Has this model, or a similar model, been used in other jurisdictions?

No city in the world has so far used an approach similar to the Safe Arrival on Time charge (SAT) to charge for usage of motorways.

However, the principal has been used in the United States (San Diego California is one example and there are several others) to charge certain motorists who use High Occupancy Transport (HOT) lanes on motorways. HOT Lanes provide free passage for vehicles with more than one or two passengers, but some HOT lanes also permit other vehicles to use the lanes if they pay. As with SAT, the charges are dynamic and vary as required to manage congestion on the HOT lanes.

The problem with HOT lanes is that they require adjacent congested free lanes on the motorway in order to encourage some motorists to divert onto the HOT lanes. For this reason they do nothing to alleviate congestion.

3. Can you outline the technology and infrastructure that would be required to implement the SAT model?

Existing technologies are quite appropriate for this purpose. Customers could choose to:

- open an account and install an electronic tag; or
- open an account and have their licence plate read; or
- not open an account, have their licence plate read and arrange to pay within 3 days.

All tollroads in Australia now offer these options and there are many millions of tags in current use.

Existing roadside technologies include tag readers, vehicle classifiers and cameras to identify vehicle and licence plates.

Existing Back Office technology would require change to accommodate the more complex charging regimes with many hundreds of thousands of alternate trips to be identified and charged appropriately (made up of different vehicle classes, different entry and exit points, dynamic charges)

Whilst the rollout of equipment across existing freeways (where no such technology currently exists) together with changes to roadside equipment and back offices on existing tollroads would have a significant cost, the costs would be small (<\$1.00 per trip) relative to the revenue generated.

A move to a single customer interface may well be desirable, though not essential.

Technologies are changing rapidly with time and any procurement should specify outcomes rather than nominate the technology. For instance, there is a move world-wide to introduce into all new cars a 5.9GHz bandwidth to be used for both vehicle-to-vehicle and vehicle-to-roadside communications. This installed equipment would provide huge safety benefits for motorists. Road charging would become an additional benefit that this equipment could provide without the need for a separate electronic tag.

4. Several models propose implementing significant changes in stages. What do you think the major stages are and which should be introduced first?

The staging of introduction is both a political and a practical issue.

From a practical point of view, there is no reason why the introduction of SAT needs to be staged. A lead time of 2-3 years would be sufficient to negotiate with all existing tollroad concessions, design the systems required and to install all equipment. Politically the process may take longer.

The most important factor in preparing for the introduction of SAT is public education.

In relation to a SAT system as proposed, staging has a significant disadvantage. It is only with the complete system in place across all motorways, with dynamic pricing in place, that a “money-back” guarantee can be provided to motorists. This may well be a powerful message to motorists. For the first time they would be provided with significant value for money in being able to travel congestion free on motorways during peak periods.