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COAG Road Reform Plan

Report for
Review of Incremental Pricing Trials

May 2011



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1. Introduction

In 2009, the NTC, Victoria, New South Wales, South Australia and Queensland embarked on a set of trials of incremental pricing whereby heavy vehicles could pay a charge to operate at a mass higher than the regulatory limits. The trials formed part of the first phase of the CRRP project and the current second stage sought a review of those trials. As it transpired, the trials did not proceed as originally envisaged.

Other schemes, with similar features to the incremental pricing trials, have been operational in Queensland, Western Australia, the Northern Territory, New South Wales and overseas. The characteristics of these schemes differ dramatically. For example, the New South Wales incremental pricing trial is concerned with one freight owner on one short route to rail head, while the WA scheme is open to any proponents and is at the discretion of Main Roads to determine whether the two part charge will be recovered from the freight owner.

COAG Road Reform Plan (CRRP) has commissioned an investigation and report on the foundations of both the schemes that have been in operation as well as those envisaged for the trials. The foundations include:

- the objectives of the trial or scheme;
- the legal framework;
- the process of safety and infrastructure assessments;
- route definition requirements;
- the pricing mechanism; and
- the method for collection and redistribution of any funds from the schemes or trials.

Understanding the foundations of these pricing attempts, as well as the key factors in their success or failure, will assist CRRP in their more fundamental work on pricing reform and progression to future Mass, Distance, Location (MDL) pricing approaches. This report sets out the findings of the study team's investigations.

The study team has interviewed key trial and scheme stakeholders to gain a broad understanding of the foundations, the hurdles and setbacks and the lessons from the various trials that are applicable to CRRP's agenda. A full summary of those consulted during this review is provided in Appendix A.

This report outlines:

- a summary of the foundation elements of those schemes that are operational;
- a discussion of both the barriers and methods to mitigate issues in implementation of the schemes that are in operation;
- identification of the key factors which emerged from other trials being progressed and mitigation methods that are applicable to future MDL and pricing work; and
- a summary of those factors which would most aid future pricing schemes.



The outcome of this review will assist CRRP in the broader task of promoting the more efficient, productive and sustainable provision and use of freight infrastructure. This review can assist CRRP by developing methods to overcome the hurdles involved in similar reforms and allow CRRP to take advantage of any applicable approaches from the trials or schemes.



2. Formal Incremental Pricing Trials

The NTC Feasibility Report into incremental pricing (2009) lists four jurisdictions that had volunteered to develop incremental pricing trials. These jurisdictions were:

1. Victoria
2. New South Wales
3. Queensland
4. South Australia

This section details the experience and outcomes of these jurisdictions.

2.1 Victoria

2.1.1 Proposed Trial Characteristics

The characteristics of the proposed scheme as detailed in the NTC Feasibility Report are outlined in the table below:

Table 1 Victorian Proposed Incremental Pricing Scheme Details

Objectives of Trial	The objective of the Victorian trial is to determine the feasibility and effectiveness of direct user charging for mass above the general mass or higher mass limits and test the administrative systems that are involved in implementing incremental pricing. In addition, the trial is also aimed at evaluating the commercial viability of the scheme from an industry perspective, taking into account the willingness of the road transport industry to pay for additional mass.
Industry Engagement Process	VicRoads has sought assistance from the Victorian Transport Association in identifying operators that are interested in the trial. At this stage, four companies have formally submitted an expression of interest, mainly with the intent of improving efficiency and productivity. The companies represent a range of industries including containers, bulk goods (grain and liquid dry) and break-bulk. One operator saw the trials as an opportunity to operate an innovative vehicle.
Legal Framework	As a result of legal considerations, trial vehicles will operate under permit conditions and be charged a "Maintenance Security Fee", which will be used to fund actual damage of road wear caused by vehicles participating in the trial. As a result, all funds collected from the trials will be held in a "Maintenance Security Fund".
Safety Assessment	The trial will be limited to vehicle configurations that are already approved for operation in Victoria. Trial vehicles will need to: <ul style="list-style-type: none"> • comply with Performance Based Standards Static Rollover Threshold; • be accredited under National Heavy Vehicle Accreditation Scheme for



	<p>mass management; and</p> <ul style="list-style-type: none"> operate under the Intelligent Access Program or have an alternative GPS unit installed.
Infrastructure Assessment and Route Definition	<p>The routes identified by transport operators to date include multiple owners such as VicRoads, Local Government and toll operators. Route assessments still have to be undertaken and consultation with local government as well as toll operators is yet to occur. Generally, the routes identified by transport operators are B-double or Higher Mass Limits scheme routes. Some of the route assessments that have been undertaken for the trials have highlighted bridge constraints as a major issue, which has eliminated a number of the suggested possible routes.</p>
Pricing	<p>The pricing schedule has not been finalised but will focus on recovering the difference between the amount of damage caused by a vehicle participating in the trial and a similar vehicle operating at the mass limit. The price will be based on the incremental cost per ESA-kilometre and will reflect additional short-run average maintenance costs using a PAYGO cost base tailored for Victorian roads. The price is considered to be close to long-run marginal costs, which theoretically may be more ideal, since the proposed network on which the higher mass vehicles will be permitted to operate is not currently at capacity or expanding.</p>
Monitoring System	<p>Transport operators will be required to keep detailed records on the vehicles operating under the incremental pricing trial and vehicles will be subject to on-road enforcement by VicRoads and Victoria Police as well as inspections at checking stations and roadside inspections.</p> <p>The records will be audited every six months by an independent auditor at the expense of the operator and a report provided to VicRoads of any non-conformances. All records must be available for inspection by VicRoads on request. VicRoads will require quarterly reporting on vehicle movements and audits will be undertaken by independent auditors on a six monthly basis. Should the Intelligent Access Program not be fitted, trial vehicles will be required to install a global positioning system device by an accredited company, which incorporates a system that is able to identify:</p> <ul style="list-style-type: none"> 'Off-route' travel; and any form of tampering or interference with the in-vehicle unit.
Fee Calculation and Collection	<p>The transport operator will be required to estimate usage for the first 12 months and fees for the first quarter will be required to be paid up-front based on this estimate. Subsequent to the first quarter, reporting of actual usage (by quarter) will be used as the basis for charging. This will include reporting information for each trial vehicle such as the distance travelled on the approved route, the number of vehicle trips and the vehicle mass (axle and gross).</p> <p>VicRoads will then issue an invoice based on the report. Invoices will be adjusted by VicRoads based on the actual usage data.</p>



Fee Distribution and Road Spending	Fees will be placed in a 'Maintenance Security Fund'. After subtracting administrative costs, fees will be used to fund additional maintenance on the routes used during the trial.
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2.1.2 Implementation of Victorian Incremental Pricing Trial

Background

As outlined in the NTC feasibility report, VicRoads began the trial process by meeting with the Victorian Transport Association (VTA) to gauge industry interest and potential participants. As a result a VTA letter, explaining the intentions of the scheme, was distributed to members. Subsequently, a number of expressions of interest were received by VicRoads.

The submissions, outlining proposed routes and vehicle configurations, were provided to the VicRoads bridge division. Most submissions were for the transport of containerised grain. Each of these submissions was assessed on merit, with particular focus upon route suitability.

In September 2009, a transport operator was approved to run one route as an Incremental Pricing Trial. Its operations under the trial consisted of running containerised grain on three B-doubles from regional Victoria to the Port of Melbourne, a distance of just under 80 kilometres. Under the trial, each B-double has permission for a mass of 70.5 tonnes. While there is no set limit per se and each application is assessed upon merit, VicRoads informed the study team that the general intention was the maximum mass would be within approximately 3 tonnes of the standard 68 tonne HML limit. Weight distribution again is assessed on a case by case basis. The transport operator's vehicle weight distribution for the trial is as follows:

- Steering axle - 6.50 tonnes gross (HML limit 6 tonnes).
- Tandem axle groups (each axle 4 tyres) - 17.50 tonnes gross (HML limit 17 tonnes).
- Tri-Axle groups (each axle 4 tyres) - 23.25 tonnes gross (HML limit 22.5 tonnes)

All trial vehicles must be accredited under the National Heavy Vehicle Accreditation Scheme (NHVAS) for mass management. Road Friendly Suspension (RFS) is a requirement under this scheme.

The study team were informed that two further operators were scheduled to begin trial participation in the trial; one of which also involved a total mass of 70.5 tonnes to the Port of Melbourne and another which involved movement of bulk goods to the Port of Portland.

Current safety conditions require that vehicles must have an Electronic Stability Control (ESC) device and GPS. IAP is not currently required but is considered to be a likely and advantageous future direction. Additionally, the operator must be part of a certified vehicle maintenance program.

VicRoads informed the study team that there was much prima facie support of the trials from industry. For example, one applicant - proposing to ship grain – indicated that the opportunity to be involved in incremental pricing trials would result in reduced total trips and a \$450 saving per trip. In comparison, the incremental price of \$20 per trip was considered minor. For the trial under way, the primary savings result from the ability to ship full containers without any further handling.



Administration

VicRoads has gained legal advice as to how the pricing mechanism for Incremental Pricing should be managed. In response to this advice, a specific fund for payments of the fee was created. In effect, once the trip route and price is agreed, the fee would be sent to this fund on a per trip basis. For example, as it currently stands, a fee of approximately \$20 per trip on top of permit prices is paid. At current trip frequency, VicRoads estimate that costs could be approximately \$20,000 per annum for the particular participant operator.

With respect to the reporting process, VicRoads currently requests an estimate of vehicles per year and trips per year from the operator. After 3 months, the operator provides a report of truck numbers and tonnage and VicRoads then manually calculate the costs.

There are further significant questions which need resolution in terms of the trial including how the data on trips is collected and how to verify the accuracy of the data. The VTA reported that the operator, is very happy with the trial to date.

Ongoing Concerns

Collection and verification of trip data with an expanded trial base is likely to be very labour intensive through the current manual calculation scheme. If hundreds of vehicles and multiple operators were participants, this system would be a far too onerous administrative burden on VicRoads.

A significant issue recognised by VicRoads and other stakeholders interviewed for this study is the management of the “last kilometre”; that is access near both origin and destination of the road network governed by local councils. While this is not a problem for the current trial (which is entirely on arterial roads), it would significantly burden operators if communication and permits were mandatory with Local Government over commonly very short distances.

At this stage VicRoads envisages, that through the proposed funding arrangements, local road contributions would be distributed by them internally to respective local governments and fed directly to the maintenance of the specified route/local road. However, local government cooperation is very much assumed and would require negotiation on a case by case basis. VicRoads considers that there is considerable variation in interest in the scheme across Victoria’s local governments.

Technical Issues

Consultation with VicRoads revealed that a major reason for many applications failing to meet the requirements for Incremental Pricing Trial participation amongst the initial applications was network constraints – that is, unsuitability of infrastructure on the proposed route. In the vast majority of cases, bridge capacity was the deciding factor. However, the bridge capacity assessments may have been somewhat absolute and there is now more potential for a more nuanced assessment which may allow for future applications to be considered more favourably. This issue is currently being addressed through the National Transport Commission Bridge Assessment Tool Project and Bridge Economics Project for Future Higher Productivity Vehicles.



In a broad sense, however, the VicRoads Bridge Department is concerned that schemes such as Incremental Pricing assessed on a case by case basis will create a lot of ad hoc networks; a messy and inconsistent approach. Furthermore, it could be argued that the route where the current trial is operating at 70.5 tonnes could be universally lifted to that level.

There are also concerns that there are conflicts with the introduction of quad axles; which is considered a better long term option than adding a few tonne to a tri-axle. If Incremental Pricing becomes common place, quad axle foundation work may be ignored to the detriment of long term productivity gains through more long term solutions.

2.2 New South Wales

2.2.1 Proposed Trial Characteristics

The characteristics of the proposed scheme as detailed in the NTC Feasibility Report are outlined in the table below:

Table 2 New South Wales Proposed Incremental Pricing Scheme Details

Objectives of Trial	The objective of the trials is to test the feasibility of implementing a direct road user charge to recover the cost of additional road wear associated with heavy vehicles operating at axle weights that exceed current statutory load limits.
Industry Engagement Process	<p>The RTA invited expressions of interest from transport operators who have:</p> <ul style="list-style-type: none"> • previously indicated that a mass concession above existing statutory limits would be desirable for their operations; • a good compliance record; and • a freight task with a nature and location that is suited to an incremental pricing application, including being restricted to operations on state-owned roads to minimise the need for local councils to assess and approve their roads. <p>The operations that are being considered to participate in the trial include coal transport, mobile cranes, buses (route and long distance) and glass manufacturing.</p>
Legal Framework	New legislation was passed by the New South Wales Government in order to enable the operation of an incremental pricing scheme. Specifically, the Road Transport (General) Amendment (Heavy Vehicle User Charges) Bill 2007 received assent on 13 December 2007. Section 28A of the Road Transport (General) Act 2005 now provides for the making of regulations in relation to incremental pricing schemes. These regulations are not yet in place.
Safety Assessment	<p>Vehicles seeking access to participate in the trials will need to be registered as roadworthy, may be required to meet the Performance Based Standards safety standards (depending on the identified risks) and would be required to meet the following entry and operating conditions:</p> <ul style="list-style-type: none"> • the heavier load must not result in the vehicle exceeding the manufacturers' gross vehicle mass or gross combination mass rating;



	<ul style="list-style-type: none"> • be accredited under the NHVAS Mass Management Module, including suspension maintenance; • be fitted with Road Friendly Suspension; and • be registered in the Intelligent Access Program (IAP). <p>The safety assessment operating requirements may vary according to identified operational risks (e.g. signage).</p>
<p>Infrastructure Assessment and Route Definition</p>	<p>The maximum mass limit for the trials has been limited to the mass limits agreed by the Austroads Pavement Review Panel. Pavement and bridge infrastructure and route assessments have been undertaken on a case-by-case basis as operator interest in incremental pricing appears to be route and load specific. The assessments have taken a number of weeks.</p> <p>In terms of the one route assessment that has been completed on a Higher Mass Limits route, the incremental load capacity that could be safely approved for the nominated route was less than the maximum increases possible under the Austroads Pavement Review Panel recommended limits due to bridge constraints.</p>
<p>Pricing</p>	<p>Three different methods were considered for developing incremental pricing estimates:</p> <ul style="list-style-type: none"> • the Freight Axle Mass Limits Investigation Tool (FAMLIT) which has been developed by ARRB Group Ltd for Austroads; • pavement management system (PLATO) developed by ARRB Group Ltd; and • a simplified model developed by the Roads and Traffic Authority (NSW). <p>Each of these models is attempting to apply a direct approach to developing marginal costs involving life cycle costing models. The models developed by ARRB require more detailed data and were considered less appropriate with the currently available aggregated data set. Consequently, the discussion in this section will focus on the Roads and Traffic Authority model.</p> <p>The increased life cycle costs were compared with a base life cycle cost reflecting the standard axle loads or design traffic. Increased traffic load was taken into account by increasing the number of ESAs on the pavement. The increased ESA was calculated by considering the various vehicle types and their axle and tyre configurations.</p> <p>The incremental price is the life cycle cost increase for a unit equivalent standard axle (ESA) increase. The incremental price is expressed in cents per ESA kilometre.</p> <p>Incremental prices have been estimated for a number of different road categories, reflecting environmental regions, pavement types, traffic loading regimes, remaining life categories and for flexible versus rigid pavements. These will form the basis for developing appropriate prices for each incremental pricing trial route. A separate tool has been developed to create a link between ESAs and freight (load) for each truck type.</p> <p>The incremental pricing estimate does not take into account the costs associated with bridges. This will be considered in the next phase of the costing work.</p>



Monitoring System	<p>During the trial phase, the distance information for charging purposes will rely on self-declaration by the operator. In terms of mass, charging would be simplified by basing charges on the maximum load increase for the route approved under the incremental pricing agreement. This would substantially reduce the need for RTA reporting and monitoring mass and route data except to identify and where necessary prosecute vehicles travelling over-mass or off-route. Operators would be charged for the full mass increment for that part of the journey that the vehicle was exceeding statutory mass limits. Actual trip data would be reconciled with the pre-paid amount (see below). For variable load operations, such as route buses, an agreed rate would be negotiated that reflected the percentage of the trip that the vehicle exceeded mass limits and the maximum allowable mass.</p> <p>The Intelligent Access Program might be used for route compliance as part of the trials, which is appropriate given that it has currently been developed for compliance purposes.</p>
Fee Calculation and Collection	<p>The current intended approach is for the operator to pre-pay the incremental price for the approved vehicles for agreed mass and distance parameters. At the end of the billing period (monthly or quarterly depending on the number of vehicles and scale of operations) the actual distance and charges due will be reconciled with the pre-paid amount and a credit or debit will be applied to the next pre-payment.</p> <p>The billing process during the trial phase may be limited to a paper-based arrangement with each approved operator.</p>
Fee Distribution and Road Spending	<p>In the trial phase, the Roads and Traffic Authority will receive the incremental pricing charges directly from operators, which will be held in a separate road fund.</p> <p>The incremental pricing revenue will be spent on road and bridge infrastructure maintenance related to freight movements under the incremental pricing trials. However, revenue will not be tied to a specific route.</p>

2.2.2 Implementation of New South Wales Incremental Pricing Trials

In the early stages, the RTA issued letters requesting expressions of interest to industry associations and operators for proposals. Several expressions of interest were received, but very few were deemed viable. Expressions of interest were deemed unviable as a result of vehicle safety issues and route capacity constraints, with bridge capacity being a significant hurdle. For example, an expression of interest was lodged for the movement of freight to Port Kembla on B-doubles however a viable route was not available.

In consultation with the RTA, it was revealed that New South Wales had to contend with a multitude of legal issues prior to implementation of an incremental pricing trial, which in part explains the slowness in adoption. Constitutional law issues regarding whether such a scheme payment was a tax or fee for service created significant complexity for the road authority and delayed the trial's initiation. In light of this, the RTA in the end chose a simple trial; one short distance of a single road and one operator.

The current trial, which began on the 6th April 2010, is being conducted in conjunction with a Local Government Council and involves 750 metres of local road from the business to a private rail head. The RTA collects the payment transparently from the operator, and is contractually bound with the Council as the asset manager to remit the money for the ongoing maintenance of the road. At this stage, the



administrative details are yet to be finalised but it is intended that the RTA will invoice the operator periodically and remit to the Council annually.

The trial allows the operator a 5 tonne increase on a quad semi-trailer using a one 40 foot container loaded with a side lifter. In total, the allowance is 55 tonnes, and represents a productivity gain of 16-18 per cent. The use of full 40 foot containers minimises handling costs at the rail head and permits the most efficient shipping of containers to worldwide locations. The operator is already NHVAS and IAP compliant. The charge itself is calculated on a per tonne basis from reports provided to the RTA which identify the number of trips and the weight per trip. The operator revealed that the fee is approximately 92 cents per trip, and estimated 4 trips per day took place. At this early stage, there has been no regular route inspection envisaged.

Broad discussion with industry associations revealed that whilst the fee paid for access is reasonable, the administrative burden on compliance was significant for the operator. Discussions with the operator revealed that whilst the current situation is now acceptable, the protracted period of negotiation for the agreement and analysis of an appropriate price – nearly 3 years - was problematic and costly. The operator also revealed that in Western Australia no additional costs are imposed, where the company is allowed to transport two 20 foot containers and one 40 foot container from a business in Albany under permit conditions.

Ongoing Concerns

While the NSW trial has gone ahead, the RTA has significant concerns with the administrative complexity involved with incremental pricing trials in the medium to long term. Despite the existing difficulties, the RTA is currently considering future incremental pricing trials.

2.3 South Australia

2.3.1 Proposed Trial Characteristics

In South Australia, the theoretical underpinnings of a potential incremental pricing scheme were included in the NTC feasibility report. These underpinnings are replicated in Table 3.

Table 3 South Australian Incremental Pricing Scheme Details

Objectives of Trial	To allow eligible vehicles to carry additional mass above their currently regulated mass limits, in exchange for the payment of a fee representing the cost of additional road wear caused by that extra mass. The South Australian trial will be focussed on providing additional mass for tri-axle B-doubles on pre-assessed routes that form a subset of the Higher Mass Limits network. This approach is being taken to minimise administrative costs and maximise synergies between the Higher Mass Limits scheme and incremental pricing (e.g. in the areas of infrastructure and safety assessments).
Industry Engagement Process	The trial will be focussed on the operation of Higher Mass Limits tri-axle B-doubles and preliminary work suggests that the identified trial would attract seven to ten operators with approx. 250-300 vehicles carrying mainly wine, beer, grain, mining and petroleum products on inter-regional routes. This approach will minimise administrative costs and maximise synergies between the Higher Mass Limits scheme and the incremental pricing trial (e.g. in the areas of infrastructure and safety assessments). At this stage, no formal industry



	engagement process has been undertaken. Preliminary estimates indicate that the trials have the potential to deliver freight savings of at least 12% or at least \$3 per tonne.										
Legal Framework	Each vehicle in the scheme is intended to run under permit. The current South Australian legislation (Road Traffic Act 1961) and subordinate regulations do not allow the application of a charge for 'road use' under permit. Rather, this will require a change to the Road Traffic Act and its regulations.										
Safety Assessment	The proposed trial is restricted to Higher Mass Limits vehicles and routes in order to most efficiently deal with safety aspects. Such vehicles are already specified for higher mass and must satisfy a number of pre-entry conditions to operate under Higher Mass Limits, including accreditation in mass management, maintenance management and route compliance. The safety assessment will be based on the Higher Mass Limits safety requirements. In addition, HML provided known, manageable routes that had an existing process for adding/deleting changing routes (i.e. the HML gazette). Requiring a Performance Based Standards assessment for all incremental pricing vehicles was considered to be prohibitive due to costs and time (3 months) involved.										
Infrastructure Assessment and Route Definition	<p>It is envisaged that maximum mass limits will be identified for a specific road network (see table below). As the trial will be focussed on routes that are currently assessed for Higher Mass Limits tri-axle B-doubles, pavement assessments have largely been completed and structural assessments (e.g. bridges, culverts) are still being undertaken. The reason for establishing a network for the trials was primarily to reduce cost to operators and to provide enough information to operators so that they can make their own commercial assessment of potential incremental pricing opportunities. In addition, it is perceived that the bulk of the extra mass market could be satisfied in this way (i.e. predefined route network), with detailed assessments devoted to truly exceptionally high mass requests.</p> <table border="1"> <thead> <tr> <th>Axle Group Type</th> <th>Maximum Increase in Mass (tonnes)</th> </tr> </thead> <tbody> <tr> <td>Steer Axle</td> <td>0.0t</td> </tr> <tr> <td>Single Axle with dual tyres</td> <td>1.0t</td> </tr> <tr> <td>Tandem Axle with dual tyres</td> <td>1.5t</td> </tr> <tr> <td>Tri-axle with dual tyres</td> <td>2.5t</td> </tr> </tbody> </table>	Axle Group Type	Maximum Increase in Mass (tonnes)	Steer Axle	0.0t	Single Axle with dual tyres	1.0t	Tandem Axle with dual tyres	1.5t	Tri-axle with dual tyres	2.5t
Axle Group Type	Maximum Increase in Mass (tonnes)										
Steer Axle	0.0t										
Single Axle with dual tyres	1.0t										
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Tri-axle with dual tyres	2.5t										
Pricing	The incremental price will be based on using the current PAYGO cost base approach (tailored for South Australian roads) to develop an average cost per ESA-kilometre, which will vary by a limited number of road types. The reason that South Australia has taken this approach for the trials is to ensure that the price reflects a fee for service in order to satisfy legal requirements and to keep the framework simple.										
Monitoring System	Monitoring is envisaged to involve global positioning system satellite tracking for distance and location as well as self reporting of mass, supported by a weighbridge certificate (where available). Mass is intended to be audited within the arrangements for mass accreditation and verified against any road traffic count and on-road enforcement data. It is proposed the SA trial be used to test various on-board mass measurement technologies in parallel with self-										



	<p>reporting. Ideally, these technologies should link with global positioning system satellite reporting.</p> <p>The legal implications and costs of monitoring have not yet been assessed.</p>
Fee Calculation and Collection	Full specifications of fee calculation and collection systems (and associated costs) have not been completed, however it is envisaged that “real time” technology will be used and payment options will be in line with those available for vehicle registration.
Fee Distribution and Road Spending	It is envisaged that the state government will initially receive funds. Detailed distribution of funds has not been determined but distribution would adhere to the “money follows the truck” principle. The time lag between collection of funds and expenditure has been identified as one of the key issues to be resolved.

2.3.2 Barriers to Implementation of South Australian Incremental Pricing Trial

No incremental pricing trials were implemented in South Australia. The main barrier was legislative and akin to the issue in NSW of constitutional considerations regarding the application of a charge. While it is noted that SA legislation does not allow for charging for road use, government stakeholders suggested that there was potential to create a scheme similar to incremental pricing under a cost-recovery scenario using a permit scheme. Indeed, it was considered that there may be incidences of the Department of Transport, Energy and Resources going into contractual arrangements with road operators who pay for extra mass under permit utilising a license fee arrangement – in effect very similar to the Western Australian Mass Concessional Loading Scheme.

It was also noted that no consultation was taken up with the road transport associations on incremental pricing in SA because they did not wish to raise expectations at the initial stage.

2.4 Queensland

2.4.1 Proposed Trial Characteristics

Consultation with Queensland Transport and Main Roads revealed that a project plan was developed for Incremental Pricing Trials in response to the NTC. The details of this plan were incorporated into the NTC Feasibility report and are replicated in the table below.

Table 4 Queensland Incremental Pricing Scheme Details

Objectives of Trial	The objectives of the trial are to assess the potential efficiency benefits from improving signals to road users about incremental costs and signals to road agencies about demand for road capacity and quality. Due to the potentially small number of participants in the trial, it is envisaged that the trial will mainly be used to assess the willingness of road agencies to ‘open-up’ the network to restricted routes in return for certainty in funding the road infrastructure being used in the trials.
Industry Engagement	Initial industry engagement involved the Queensland Trucking Association (QTA) which provided a list of operators that may be interested in participating in the trial. As a result,



Process	<p>individual operators were invited by letter to participate in the trial.</p> <p>Following several discussions with a small number of operators, Queensland has been in discussion with three transport operators with regard to proposed routes and vehicle types for assessment.</p>
Legal Framework	<p>Existing Queensland regulation (Transport Operations (Road Use Management – Mass, Dimensions and Loading) Regulations 2005) allows operators to carry safe additional mass in exchange for paying for the additional wear of infrastructure attributed to the additional mass via a permit system.</p>
Safety Assessment	<p>The safety assessment will be based on the current Performance Based Standards (PBS). These assessments will be conducted by desktop simulation and operating conditions will be guided by the results of the assessments.</p>
Infrastructure Assessment and Route Definition	<p>The maximum mass limit for the trials has been allowed to go above the limits agreed by the Austroads Pavement Review Panel on the basis of an assessment of the capability of the roads that would be used in the trials.</p> <p>Routes will be determined and approved based on routes proposed by transport operators. Current applications involve state and local roads. Infrastructure mass limits will be assessed on a case by case basis due to the complexity of the road network.</p> <p>The length of time involved in the infrastructure assessment depends on several factors including the number and complexity of vulnerable assets along the proposed route as well as availability of resources to process applications. Queensland envisages that the assessments of state controlled infrastructure for the trials may take several months depending on the availability of skilled engineers. An infrastructure assessment of one proposed route indicated that there was not enough bridge and road infrastructure capacity to carry the higher mass.</p> <p>Additionally, there is uncertainty about the availability of local government resources with respect to route assessments.</p>
Pricing	<p>It is expected that short-run marginal costs will be used as a basis for pricing of road pavements while bridges will be excluded as the short-run marginal costs of bridges cannot easily be determined. There are a number of methods that are being assessed to develop prices, including:</p> <ul style="list-style-type: none"> • PAYGO unit cost rates (an indirect cash accounting approach), similar to the national costing model used to generate the current registration and fuel based charges; • “Bring-forward costs” (a direct approach) using a model that would incorporate roughness, traffic and pavement types; and • Lifecycle costing model (an indirect annuity of future lifecycle cost approach) which would develop “equivalent” annualised costs.
Monitoring System	<p>Monitoring will involve self declaration of mass and distance travelled and adoption of the National Heavy Vehicle Accreditation Scheme (NHVAS) Mass Management by transport operators. This would likely be supported by certified weighbridges as the measuring device</p>



	<p>for mass.</p> <p>The primary monitoring mechanism will be self declaration of mass and distance. The Intelligent Access Program was initially proposed. However, this requirement was withdrawn in order to encourage interest from industry as a result of the high costs of participation using this approach.</p>
Fee Calculation and Collection	<p>Participating operators will be supplied with spreadsheets containing an embedded incremental charge calculation formula. Fees would then be calculated when the operator enters mass distance travelled and number of trips into the spreadsheets via a self-declaration process. At the end of each month, the operator will send the completed spreadsheets together with payment to Queensland Transport.</p>
Fee Distribution and Road Spending	<p>Revenue generated from the trial will be forwarded to the state government and relevant local governments. The revenue received by state versus local governments will be apportioned based on relative ownership of the infrastructure used in the trials.</p> <p>Fees collected from the trial are intended to be spent on maintenance of the routes used as part of the trials.</p>

2.4.2 Barriers to Implementation of the Queensland Incremental Pricing Trial

According to the Department of Transport and Main Roads, funding was sought and the foundation work of the trial was commenced. Several approaches were made by the Department to industry groups. Four or five positive indications of interest were received, with three making formal requests for participation. However, when the proposed routes were analysed, none could be approved due to infrastructure constraints such as bridge capacity or pavement strength. The Department informed the study team that they then chose not to initiate any further applications for trialling when the decision was made by COAG to include incremental pricing in the CRRP process.

Details of the journeys from three of five carriers who expressed interest in the incremental pricing trials were:

- Brisbane to Mackay utilising a prime mover and semitrailer and B-double (1,016km), July 2008
- Toowoomba to Northern Territory border utilising road trains, types 1 and 2 (Toowoomba to Mitchell 445km road train type 1, Mitchell to NT border 1,460km road train type 2), July 2008
- Townsville to Mt. Isa utilising B-doubles to Roseneath and AB Triples, ABB Quads, and double and triple road trains from Roseneath to Mt Isa, August 2008
- Townsville to Cloncurry utilising a triple road train to haul bulk cement, September 2008
- Toowoomba to Ipswich using body truck and quad axle dog trailer to haul aggregate, 2008.

Queensland Transport and Main Roads stakeholders informed the study team that the above routes could not be approved either due to infrastructure vulnerability, bridges and pavement, or complexity in route assessment.



2.5 Features of successful incremental pricing trials

Of the four jurisdictions that volunteered to develop incremental pricing trials only two, Victoria and New South Wales, have successfully implemented trials. In South Australia, the legal hurdles in terms of fee collection were determined to be insurmountable. Queensland's potential trials did not proceed primarily as a result of technical issues involved in the route assessments.

Table 5 provides compares the key features of the two operational incremental pricing schemes.

Table 5 Characteristics of Implemented Incremental Pricing Trials in Victoria and New South Wales

Characteristics	Implemented Victorian Trial	Implemented NSW Trial
Number of Trials	One in operation another two in planning	One in operation
Length of Route	80km	750m
Commodity	Containerised Grain	Containerised frozen meat for export
Road Owner(s)	VicRoads	Local Government Council
Trial Administers	VicRoads	RTA
Price per Trip	\$20	<\$1
Price per Kilometre	25c	<\$1
Number of Trips per Annum	Approximately 1,000	Approximately 1,000
Vehicle Type	B-Doubles	Quad axle semi-trailer
Incremental Weight per Vehicle	2 tonnes	5 tonnes
Objectives of Trial	As articulated in the feasibility study refer to Table 1.	As articulated in the feasibility study refer to Table 2.
Industry Engagement Process	VicRoads approach industry via the Victorian Transport Association	The operator approached the RTA through the Council.
Legal Framework	As envisaged in feasibility study, trial vehicles operate under permit conditions and are charged a "Maintenance Security Fee". Given the relative newness of the trial it is unknown whether the funds collected will be used to fund actual damage of road wear caused by vehicles participating in the	The current trial relies on permit scheme provisions.



Characteristics	Implemented Victorian Trial	Implemented NSW Trial
	trial.	
Safety Assessment	<p>The safety assessment conditions in the implemented trial do not fully extend to those outlined in the feasibility report</p> <p>Current conditions for signoff require that vehicles must have an Electronic Stability Control (ESC) and GPS installed. IAP is not currently required but is considered to be a likely and advantageous future direction. Additionally, the operator must be part of a certified vehicle maintenance program such as NHVAS.</p>	<p>The operator involved in the trial is NHVAS and IAP compliant.</p> <p>No further safety requirements are in place.</p>
Infrastructure Assessment and Route Definition	<p>The route defined for the implemented trial did not require infrastructure improvement and is wholly owned by VicRoads.</p> <p>It is understood that the two impending trial routes involve either bridge works prior to approval and / or involve multiple asset owners.</p>	<p>A route and infrastructure assessment was completed prior to the implementation of the trial. The assessment was at the cost of the operator</p>
Pricing	<p>It is understood that the trial pricing was based on the PAYGO approach and included a 'gate keeping fee' to the operator to cover infrastructure assessment costs.</p> <p>If other operators chose to utilise the same vehicle configuration on the same route they would not have to pay the gate keeping charge.</p>	<p>Pricing is based on previous assessment based on the PAYGO approach.</p>
Monitoring System	<p>The monitoring system implemented is akin to that outlined in the feasibility study as detailed in Table 1. In short, the onus is on the operator to keep records of movements which can be audited by the road agency. The operator is required to have a GPS system on the vehicles and an Electronic Stability Control device.</p>	<p>The monitoring system is based on self declaration by the operator.</p>
Fee Calculation and Collection	<p>The fee calculation and collection system implemented is akin to that outlined in the feasibility study as detailed in Table 1. In short, the operator estimates trips in</p>	<p>The calculation and collection process is a simplified version of that intended in the feasibility study as detailed in Table 2. In short, the operator pays in advance on estimated</p>



Characteristics	Implemented Victorian Trial	Implemented NSW Trial
	advance and the agency calculates the charge based on actual travel.	travel per annum and the agency adjusts based on actual travel.
Fee Distribution and Road Spending	<p>The fee distribution features implemented are intended to be akin to that outlined in the feasibility study as detailed in Table 1. In short, fees are to be contained in a maintenance security fund.</p> <p>Given the recent implementation of the trial no road spending has occurred.</p>	<p>The RTA collects the payment from the operator, and is contractually bound with Council as the asset manager to remit the money for the ongoing maintenance of the road.</p> <p>At this stage, the administrative details are yet to be finalised but it is intended that the RTA will invoice the operator periodically and remit to the Council annually.</p>

The key differences between the trials can be summarised as:

Champions of Trials

In Victoria, the State Road Agency championed the trial and engaged industry and worked with an operator to implement a trial. In New South Wales, the trial was first championed by the operator who worked with the relevant road owner and the Roads and Traffic Authority to develop the trial

Legislative Approach

Both jurisdictions faced legal issues in implementing the scheme, Victoria utilised a previously existing permit scheme approach and it appears that NSW also utilised a permit scheme and set up a contract letter of agreement with the Council.

Role of the State Road Authority

In Victoria, Vic Roads is both the owner of the road asset and the administrator of the scheme. In New South Wales, the RTA operates as administrator on behalf of the Council and was also involved in establishing the trip price.

Gate Keeping Fee

Victoria required the operator to pay for the cost of the infrastructure assessment and administrative costs involved through a gate-keeping fee. In NSW the operator paid the costs of the network assessment outside of the formal trial parameters.



3. Schemes Similar in Concept to Incremental Pricing

3.1 Western Australia

Western Australia's Concessional Mass Loading Scheme has been in operation for approximately 12 years. The scheme is based upon allowing 23.5t on triaxles

A copy of the Western Australian draft policy is reproduced below in Box 1. WA Main Roads advised that there are many examples of operators carrying less than 300,000 tonnes per annum who, although members of the permit scheme, do not have to pay. According to sources at Main Roads, the rationale for this arrangement was to ensure that the administration costs of monitoring and collecting revenue below this 'minimum cap' would outweigh the revenue collected.

One example of the scheme in operation is an operator carrying iron ore traversing a route from mine to the nearest port, a distance of over 400 kilometres.

In this case, the administration is the responsibility of the relevant MainRoads WA Regional Manager, whose role it is set the price and ensure the funds are spent on the particular road. It is estimated the operator pays approximately \$3 million per annum. Rather than a permit, the pricing scheme arrangement is contractual by deed between MainRoads WA and the operator, with the express stipulation that the funds be spent on the maintenance of the road. The road in question has thin pavement and sustains significant damage due to the mining transport task which is by far the majority of the freight task moving along the road.

Mainroads WA's methodology for determining the charge involved utilising a number of different approaches and invoking the fourth power rule. The comparison of different approaches found only minimal difference in the trip charge. The price was estimated at [at defined fraction of one cent] per gross tonne kilometre. Given the size of this task relative to other freight movements on the road, it was estimated the concessional extra loading created a 90 per cent increase in damage.

The administration of the scheme is considered by MainRoads WA to be simple and transparent through the clarity of the contract deed. The administration is paper based. The task is also easily auditable as a result of the simplicity of the road network and the transparency of loading through the relevant port. Safety compliance is compulsory in that an accreditation system is required to guarantee quality of loading.

Box 1 Western Australian Mass Concessional Loading Scheme Draft Policy

Draft policy

FUNDING CONTRIBUTION POLICY CONCESSIONAL LOADING SCHEME (CLS)

Policy Statement

"Owners, producers or receivers of nominated commodities hauled in heavy vehicles using a Concessional Loading Scheme permit may be required to make funding contributions for the additional costs incurred in making the roads and bridges used capable of accommodating the heavy vehicles and sustaining the roads and bridges when the haulage takes place."



Background

Main Roads will permit heavy vehicles to transport commodities on the road network at axle loads above the standard limits specified in the Vehicle Standards Regulations under certain conditions.

These conditions are specified in Main Roads' various Concessional Loading Schemes.

Where Main Roads is requested to permit a new haulage task that proposes to operate:

- at the higher axle loads of one of Main Roads' Concessional Loading Schemes, and the new haulage task is so large that it significantly increases the annual tonnage transported by heavy vehicles along a road or significantly increases the number of heavy vehicles using a road; or
- at axle loads above those allowed in Main Roads' Concessional Loading Schemes,
- then Main Roads will consider permitting the new haulage task provided that Main Roads is compensated for:
 - any modifications to the road and bridge asset that are required to enable the heavy vehicles to safely interact with other road users; and
 - any additional damage to the road and bridge asset due to the higher axle loads over and above the anticipated level of wear that would be caused by conducting the haulage task at standard axle loads.

In general, Main Roads will apply this policy to the owner, producer or receiver of a commodity, but not to the heavy haulage operator who is transporting the commodity.

Principles

- Full cost recovery
- Equitable charging
- Transparency
- Road safety and efficiency
- Deed of Agreement between the State and the owner of the product being hauled

Objectives

- Efficient use of road and bridge infrastructure
- Efficient freight transport
- Freight transport that is acceptable to the community
- State economic development
- Responsible asset management

Business Rules

1. Main Roads will only offer a proponent membership of a Concessional Loading Scheme where this does not disadvantage alternative modes of transport that could perform the task such as rail or sea.



2. The Concessional Loading Scheme will apply to a defined route.
3. Two types of funding contributions apply:
 - a) An 'up front' capital contribution to bring the roads and bridges on the route up to a suitable technical standard prior to the commencement of operations; and
 - b) A regular recurrent contribution to be used to keep the roads and bridges on the route at an acceptable standard.
4. In cases where immediate upgrades to roads and bridges are not required there will be no need for a capital contribution.
5. The capital contribution for State roads shall be determined by Main Roads giving regard to the safety of road users and the existing condition of the roads and bridges to accommodate the transport task.
6. In general the recurrent funding contribution will be determined using a methodology largely based upon that proposed by the NTC in 2007 for High Productivity vehicles and the rates and experience from the [inaugural incremental pricing] agreement. It will be determined on the basis that half the travel is laden at the agreed mass limits, and half unladen, and will apply to all travel on State roads. However, depending on the particular circumstances (i.e. condition of the existing pavement, bridges etc and the quantum of the transport task) the actual contribution may need to be negotiated between Main Roads and the proponent.
7. The funding contributions will be in addition to the prescribed permit fees.
8. Use of local roads will only occur with the agreement of the relevant Local Government.
9. Any funding contribution to local roads will need to be negotiated separately between the proponent and the Local Government. Main Roads will not issue a proponent with permits for a Concessional Loading Scheme on a local road without the approval of the Local Government.
10. The policy will only apply to cases of substantial product movement – over 300,000 tonnes in a financial year or if the new road transport task increases heavy vehicle traffic on a road by more than 20 percent:
 - a) from one origin; or
 - b) from one product producer; or
 - c) to one destination.
11. Main Roads will enter into a Deed of Agreement with the owner, producer or receiver of the product being transported. The Deed of Agreement will authorise the State to have the records of:
 - a) the product owner, producer and receiver; and
 - b) the transport companies and these records will be audited for compliance purposes. Main Roads may impose a requirement of GPS tracking, to monitor / confirm vehicle movements.



12. Main Roads reserves the right to cancel the Deed of Agreement in the event of serious breaches of the Agreement.
13. Under the Deed of Agreement the proponent will be purchasing the right to do a certain amount of road wear. Main Roads will guarantee to maintain an agreed level of road service / condition for the duration of the transport task.
14. Any funding generated under the Agreement will be spent on road and bridge maintenance / improvements on the route to which the Agreement applies. (This may be amended once the review of the Main Roads Act is completed and our powers to enter into agreements of this nature are more clearly defined).
15. The charge will be [a defined fraction of one cent] per tonne-kilometre (of product) travel on State roads for each tonne over the 300,000 tonne annual threshold for vehicles operating with 23.5 tonne triaxle groups. The charge is subject to annual reviews based upon changes in the CPI.
16. Charges for higher mass will be considered on a case by case basis using the same methodology.



3.2 Northern Territory

Whilst not conducting Incremental Pricing trials, The Northern Territory has in place several schemes which are similar in effect through a broadly consultative policy approach. Examples include:

- Warrego Road: near Tennant Creek, where a fee of \$30 per trip was levied to compensate for triple road trains carting copper concentrate potentially causing erosion of gravel shoulder on a narrow seal during the 1990s. The road length was approximately 30 kilometres. The scheme ceased after 12-18 months, following completion of cartage operations. The quantum of fees paid over that period is unknown.
- Groote Eylandt: the road from the mine to port allows a quad axle, four trailer configuration with Road Friendly Suspension on a public road used, constructed and maintained by the mine owner. The innovative vehicle carries a total payload in excess of 200 tonnes and meets the majority of requirements for a PBS vehicle. The quad axle group loading is well in excess of the normal mass allowable of 27 tonnes but the mine owner accepts all risk for any damage to pavement.

Department of Lands and Planning Stakeholders also expressed similar concerns to other state road agencies regarding the potentially ad hoc nature of Incremental Pricing networks. In the Departments' mind this was exacerbated by the extreme diversity of freight in the Northern Territory.

3.3 New South Wales

Consultation with the RTA revealed that a concept similar to incremental pricing existed within NSW in the form of tiered registration charges and permits years ago, but were removed in the 1990s.

Following the Economics of Road Vehicle Limits Study (ERVL), the mass limits were raised from 36 tonnes to 38 tonnes in the early 1980s. The Review of Road Vehicle Limits (RORVL) in 1985 recommended the choice of 41.0 tonnes and 42.5 tonnes mass limits. States like NSW and Victoria introduced permits (with different fee levels) to enable industry to take up the option of additional mass.

3.4 Queensland

Consultation with industry revealed a relevant example from approximately 15 years ago conducted by a mine owner where a 167 tonne Road Train was allowed access by way of a permit condition to the mine owner that they would rebuild the highway if any damage resulted. An assessment was made of any damage caused by operations. The only work required was to rebuild the intersection with the national highway. However, only a small number of companies such as mining companies could potentially operate in this fashion.

3.5 Overseas experience

In the Canadian province of Saskatchewan, the Transportation Partnership Program (TPP) operated by the Saskatchewan Government Ministry of Highways and Infrastructure, gives heavy vehicle operators an opportunity to operate at higher mass and over dimension beyond standard limits. The program began in 1996. Participants in the scheme were chiefly involved in the movement of heavy bulk freight.



As stated in the NTC Feasibility Report, the initial objectives of the program were to:

- support economic development by increasing transport productivity;
- enhance the safety of vehicles participating in the program;
- achieve commercial arrangements with transport operators so that there is no subsidisation by taxpayers; and
- deliver revenue to the Saskatchewan Province at a 50% share of any additional efficiency benefits an operator can generate by being able to participate in the program.
- The program was able to deliver:
 - approximately \$4 million (in Australian dollars) annually in new revenue for highway projects from Transport Partnership Agreements;
 - five times the level of safety for vehicles operating under the program, and
 - annually recurring benefits of around \$84 million (in Australian dollars) in additional economic development across the transportation related industry.

All incremental road and bridge costs associated with using the overweight vehicles and any incremental costs to the client were deducted from truck haul savings. In the initial program, the client retained 50% and the other 50% was used for road improvement projects. The road contributions did not revert to the consolidated fund of the province but were deposited in separate accounts that disperse the money for the highway improvement projects that have been mutually agreed to by the Department and the client.¹

In September 2008, the structure of the Transportation Partnership Program was changed. The objective of delivering revenue, which related to sharing the freight savings, was removed from the program. The change was largely due to a change in government and an enhanced transport budget for the province.²

¹ Joint Transport Research Centre of the OECD and the International Transport Forum Higher Productivity Vehicles – Productivity, Safety, Infrastructure and Environmental Impacts

² National Transport Commission, *Incremental Pricing Scheme Feasibility*, p.72



4. Issues and Recommendations

4.1 Observations and Considerations

The experiences outlined above in the formal incremental pricing trials (Section 2) or other schemes with similar characteristics (section 3) indicate that:

1. Schemes have often arisen as ad hoc responses to stated needs by operators;
2. Where trials have been implemented it is where infrastructure ownership was in the hands of one owner and usually the state road agency;
3. Where trials were implemented, the routes have been assessed as meeting standards required for overmass vehicles. Where there has been an issue in terms of road or bridge standards the trial has usually not progressed unless there has been a commitment by the operator to be involved in investment;
4. Charges agreed to for incremental damage appear to be a small fraction of the potential productivity benefit to the operator;
5. Pricing methods, although not entirely consistent, have all made some attempt to cover the marginal cost of additional road wear;
6. Any funds collected in these schemes appear to not be incorporated into the state accounts for determining the cost base for heavy vehicles;
7. Administration has been generally paper based and considered too onerous for broader application;
8. Self declaration by operators is appropriate given the size of the trials that were implemented however this is not an appropriate enforcement method for broader MDL consideration; and
9. An increased recognition by asset managers that permitting increased mass on roads can be an opportunity to share risk.

4.2 Consistency with CRRP Objectives and Policy Principles

As discussed above, the schemes and trials detailed in this study have often arisen as a result of industry needs. This evolution has the propensity to raise inconsistencies with broader road reform objectives. Table 6 details a review of whether the concept of incremental pricing as experienced in the trials and related schemes is consistent with stated CRRP policy objectives and principles.



Table 6 Consistency of Incremental Pricing with CRRP Objectives and Policy Principles

CRRP Policy Objectives	Comment	Discussion
To promote the more efficient, productive and sustainable provision and use of freight infrastructure	Potentially consistent	<p>Incremental pricing and related charging schemes are consistent with this objective with the following caveats:</p> <ul style="list-style-type: none"> - incremental costs can be calculated; - users are charged for the use of the infrastructure; - administration costs are incorporated in some way into the charge; - revenue from charges is incorporated into the road owners accounts appropriately; and - revenue is returned to the upkeep of the freight infrastructure which has been impacted.
Ensure that national heavy vehicle road prices promote the efficient, safe and sustainable use of infrastructure, vehicles and transport modes	Uncertain	<p>Incremental pricing and related charging schemes can promote efficient use of road infrastructure.</p> <p>The impact of incremental pricing and related charging schemes on the safe use of infrastructure is dependant both on the safety standards and monitoring considerations incorporated into the scheme's design</p> <p>Concerns were raised during consultation that incremental pricing could stymie innovation in vehicle design.</p> <p>In summary there may be a cost to long term efficiency gains and inappropriate signals regarding vehicle choice.</p>
CRRP Heavy Vehicle Charging Principles		
Heavy vehicles charges should recover the efficient cost of providing, maintaining and operating roads for use by heavy vehicles.	Potentially consistent	<p>To be fully consistent with this principle, the charge applied to heavy vehicles would need to relate to the actual rather than average mass carried (as well as ensuring that the charge was the efficient cost for providing, maintaining and operating roads use by heavy vehicles).</p> <p>If there was broader use of incremental pricing where users pay for the difference between statutory maximum load and the incremental weight of their load whilst the basis for the current road user charges (registration and fuel) was average mass there could be growth in the underrecovery of costs.</p>
Heavy vehicles charges should be forward-looking and provide incentives for efficient and effective 'life-cycle' road provision and maintenance.	Potentially consistent	<p>If funds are returned to the road affected then incremental pricing and related charging schemes can provide incentives for efficient and effective 'life-cycle' road provision and maintenance.</p>
Heavy vehicles charges should be determined with reference to the marginal cost of road provision, maintenance and	Consistent	<p>Where charging methods developed for the incremental pricing trials and other related schemes all reference the marginal cost of road provision, maintenance and operation</p>



CRRP Policy Objectives	Comment	Discussion
operation.		
Heavy vehicles charges should be determined with reference to the transaction costs associated with the charge.	Consistent	Where incremental and related charges can and should include transaction costs including the costs of network assessments, enforcement and administration
Heavy vehicles charges should be determined with reference to the extent that heavy vehicle road users are able or likely to respond to price signals.	Consistent	The very essence of incremental and related charges is that the road user can respond to the price signal by either opting in or out of the scheme
Heavy vehicles charges should be determined with reference to minimising distortions to the efficient pattern of use of the road network.	Consistent	Incremental pricing trials and related schemes do not necessarily distort the efficient pattern of use of the road network
Heavy vehicles charges should be developed through continuously improving transparent and public process.	Potentially consistent	The incremental pricing trial process was an approach to developing and improving pricing in a transparent manner. However further attempts could be made to improve the transparency of the pricing calculation.

4.3 Resultant Recommendations

Table 7 details the issues and barriers that have been encountered during the implementation of the incremental pricing trials and related schemes. Where these barriers have been overcome the method of mitigation is outlined. This table also outlines any resultant recommendations that can be learned from the trials and schemes that have relevance for MDL.

As a result of this review, the following success factors are put forward for consideration in MDL pricing work which the study team feel are likely to boost the chances of success for future schemes:

- A consistent, simple and transparent pricing model that is available to all stakeholders for verification purposes;
- A centralised administration point to provide advice and consistency of approach for potential participants and road agencies;
- Resources devoted to the task of administration of schemes such as this within each state road agency;
- A staged and structure approach to managing network constraints particularly bridges;
- A consistent approach to vehicle safety considerations that does not overburden either the operator or the enforcement agencies;
- Ensuring that administration and enforcement costs as well as network assessment costs are appropriately and consistently incorporated into any incremental charge if appropriate; and



- Methods to ensure that any funds collected from these schemes are accounted for in the road cost base for charges in order to not distort heavy vehicle charges.

Table 7 Issues and Recommendations

Theme	Issue/Barrier	Method of Mitigation in Incremental Pricing Trials where appropriate	Considerations for MDL or related pricing schemes	Recommendation for future MDL or related pricing schemes
Administration	Multiple schemes would require significant administrative resource	Factor this into the price. Have only a few trials operating at any one time	Insignificant as current administration of trials would have to be superseded in MDL	Administration costs will need to be incorporated into any charge for heavy vehicles
Administration	Ability of road owners to manage multiple applications in terms of infrastructure assessments and setting charges prior to applications being approved	Minimise the number of trials in operation at any one time.	A general issue when considering road reform	Develop appropriate project management skills and charging toolkits to streamline processes
Industry engagement	A number of proposed trials were knocked back for being too administratively difficult after the industry had invested significant time and resources in developing the application	Not dealt with	A general issue when considering road reform	Ensuring consistency across jurisdictions and ensuring consistent project management



Theme	Issue/Barrier	Method of Mitigation in Incremental Pricing Trials where appropriate	Considerations for MDL or related pricing schemes	Recommendation for future MDL or related pricing schemes
Jurisdictional divergence	Whilst some road agencies charge for incremental costs others choose not to	Operators weigh up the cost of applying and paying for incremental cost versus expected benefit. Administrators set a tonne minimum for recovery	Insignificant as MDL is likely to involve a move to a new uniform set of prices and mass limits that are not based on jurisdictional boundaries	Not applicable
Monitoring	Divergence in the use of monitoring techniques with many agencies and industries not using IAP	Utilising manual auditing processes	Significant consideration going forward for MDL	Clarify the role of IAP and other monitoring methods such as GPS
Legislative	Legislative advice that indicated state road authorities could not collect funds as could be conceived as a tax	Reliance on existing permit schemes and contractual arrangements	Significant consideration going forward for MDL pricing and would require institutional change	Depending on the structure of MDL pricing and funding streams, there will be a need to consider whether this will remain an issue
Network constraints	Bridges on network where it was too difficult to determine incremental cost	Restrict trial to simplified routes	Significant consideration going forward for MDL and related pricing schemes	Either all bridges in Australia or a subset on a network deemed appropriate for MDL pricing will need to be audited and charging models be further developed.



Theme	Issue/Barrier	Method of Mitigation in Incremental Pricing Trials where appropriate	Considerations for MDL or related pricing schemes	Recommendation for future MDL or related pricing schemes
Ownership	Multiple owners of road	Cordon trial to one route	Significant consideration for MDL	Depending on the structure of MDL pricing and funding streams, there will be a need to consider whether institutional changes are required
Pricing	Development of an appropriate incremental price requires significant resources	Simple routes and simple vehicle configurations	Significant consideration for MDL	Development of a model that provides a simple and transparent method of calculating price, the revenues attributable to each road owner as well as administration costs
Pricing	Resources are not available to some local road owners to determine appropriate price on a case by case basis	Price determination undertaken by a state road authority with more resources	Significant consideration for MDL	Development of a model that provides a simple and transparent method of calculating price and the revenues attributable to each road owner as well as administration costs
Road spending	Issues with pricing trials and cost recovery under PAYGO	Small level of annual charges that are recovered under trials are insignificant in PAYGO tracking	Consideration for MDL	Ensure consistent in reporting of funds received through such trials to inform the cost base



Theme	Issue/Barrier	Method of Mitigation in Incremental Pricing Trials where appropriate	Considerations for MDL or related pricing schemes	Recommendation for future MDL or related pricing schemes
Road spending	Tracking funds recovered to route spending	Incremental weight of vehicles in trails are not significantly damaging the routes they are traversing	Insignificant	n.a
Road spending	Redistribution of funds where there are multiple road owners	Simplified trials to one road owner	Significant	Potential need for centralised redistribution system

4.3.1 Administration and industry engagement

When progressing MDL reform the appropriate administration will be paramount. Experience from the incremental pricing trails indicates that ad-hoc approaches that required significant paper based recording and auditing process as well as significant resources to determine the appropriate incremental pricing will not be appropriate or efficient for a broader scheme. As a result it is recommended that systems are aligned between jurisdictions and a centralised streamlined process is established to provide a one-stop shop for both the industry and road agencies.

As a result of the trials it has been recognised that industry is prepared to pay a reasonable price for incremental mass and were keen to progress this opportunity by working with road agencies. The industry's frustrations with the trials stem from the cost of establishing a trial and the perception that some suggested routes were too difficult to determine a price due to ownership complexity pr infrastructure issues. A simple and effective pricing solution will reduce these concerns dramatically as will a one-stop shop approach to the determination of the charge.

4.3.2 Jurisdictional divergence

There remains jurisdictional divergence in the implementation of incremental charging. For example, in WA the incremental charge is not applied until a minimum tonnes per annum is reached, could be built upon.

4.3.3 Monitoring

The use of IAP in the incremental pricing trials was not seen as necessary by jurisdictions in all trials and, instead, other methods of monitoring were utilised. The role of IAP will be a significant consideration going forward for MDL and it is recommended that the role of IAP and other monitoring methods such as GPS be clarified as expediently as possible.



4.3.4 Vehicle Standards

Some agencies have accepted innovative vehicles which meet most of the PBS requirements because full compliance with PBS is unattainable particularly in Level 4. As stated in the PBS Review 2009, “advice from industry indicates that they have been able to design innovative high productivity vehicles that perform at levels equivalent or better than existing vehicles but these vehicles are unable to meet all Level 4 performance values.”

4.3.5 Legislative

Legislative advice for a number of jurisdictions indicated that state road authorities could not collect funds from incremental pricing trials as they could be conceived as a tax. This was overcome in the incremental pricing trials by reliance on existing permit schemes and contractual arrangements that were already in place in jurisdictions. This is a significant consideration going forward for MDL pricing and would require institutional change.

4.3.6 Pricing

If MDL is to incorporate a form of incremental pricing, a number of issues regarding the calculation of the charge and the redistribution of the funds will need to be overcome. As a first step it is recommended that a national model is developed which provides a simple and transparent method of calculating price (which would incorporate administration costs) as well as relative revenue redistribution to varying road owners.

4.3.7 Road spending

Under the current status of the incremental pricing trials it is unclear whether the revenue collected from the trials is being returned to fund work on the routes. For efficiency purposes, under a national system there will need to be an audit process to ensure that these funds are being redirected to maintain the routes being traversed. Further to this, funds collected and utilised in this manner will need to be appropriately incorporated into the road cost base accounts. This will be particularly an issue if there is broader use of incremental pricing under MDL.



Appendix A
Stakeholder Consultation



Roads and Traffic Authority NSW

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Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
Final	Anya Richards Ben Timmis	David Rolland		David Rolland		18/5/2011