Payment Mechanisms
Issue Paper

Extract from a paper reviewing various tolling mechanisms for an Australian toll road project, 2004. Provided by Paul Reddel, Regional Program Leader, East Asia & Pacific, World Bank.

The following key characteristics of the payment mechanism for a successful project should be noted (expanded on in Section 2 below):

- consistency with the State's overall objectives for the Project;
- consistency with the State's preferred service outputs and risk allocation profile; and
- acceptability within the market of potential Proponents.

Absent a detailed expression of the State's objectives for the Project (and consequently the implications this may have for the preferred risk allocation profile of each PPP Option considered in the Business Case), much of the discussion set out in this paper focuses on the over-riding objective of identifying the Option which is most likely to offer the greatest value for money.

This should not be interpreted as an indication that other objectives are not relevant to the development of the payment mechanism, simply that these other objectives (such as effective traffic management across the network) need to be explored further. This paper is designed to initiate this work.

In this context, this paper is structured as follows:

- Background information on the general characteristics of a payment mechanism;
- Overview of the development of Service Payment mechanisms for PPP roads projects;
- Shadow toll mechanisms (description and implications for potential value for money);
- Availability mechanisms (description and implications for potential value for money);
- Active traffic management mechanisms (description and implications for potential value for money);

Once complete, it is intended that this paper would usefully form an appendix to the Business Case, in support of the decision on the payment mechanism principles which underpin the assessment of potential value for money for the Project.

2. Background - General Characteristics of a Payment Mechanism

Absent a material revenue stream from users of the relevant service, the payment mechanism for a PPP project is the commercial structure through which the Concessionaire receives Service Payments from the State in return for the provision of relevant services over time. As a consequence, it is also a primary method for supporting the service objectives and risk transfer preferences of the State, by linking the fiscal performance of the Concessionaire to its service provision performance, as measured against a KPI regime.

These Service Payments are the principal means through which a Concessionaire is able to recover costs and earn a commercial rate of return for the provision of services where direct user charging is either unavailable or insufficient to provide such commercial return in isolation. In relation to the Project, these Service Payment options are particularly relevant where the State retains the toll revenue stream, or transfers the entitlement to this revenue stream to the Concessionaire but chooses to limit the level of direct tolls which may be levied.

From the perspective of the State, the key defining features for a robust payment mechanism structure include:

- It aligns with the State's service objectives and risk transfer objectives;
- Its structure is understood and accepted by the market;
- The payments and abatements (under the KPI regime) are linked to factors which are within the Concessionaire's reasonable ability to control;
- The value of payments made to the Concessionaire reduce if the standard of services provided by the Concessionaire reduce (consistent with the "no service, no fee" principle);
- The liability to make payments is not unbounded (i.e. it has some form of capping); and
- Subject to performance, the payments are sufficient to support a commercial rate of return to the Concessionaire.

In turn, the market will be focussed on a payment mechanism which is clear and certain, and not substantially exposed to factors over which it has limited influence or ability to control. This is required to provide sufficient confidence to support the commitment of finance (both debt and equity), to be serviced by forecast service payments.

In this regard, the market is likely to look to comparable precedents for payment mechanisms and the experiences which have been observed in the operation of these mechanisms. Generally, the market is likely to have a greater appetite for payment mechanism models which have strong parallels to structures that have been proven in practice.

3. Development of Service Payment Mechanisms for PPP Roads Projects

The development and evolution of service payment mechanisms for PPP roads projects has principally been driven out of the UK market, which is widely acknowledged as leading the international PPP[1] market. Broadly, the UK market has been developing and implementing service payment mechanisms for PPP roads projects for approximately a decade. This has enabled the mechanisms to evolve over time, with the benefit of experiences from the operating phase for earlier projects.

Further, as the UK market has developed against a policy backdrop which precludes toll roads[2] there has been much greater focus on the use of service payment mechanisms than, say, for the Australian market, in which toll roads dominate. In considering the application of UK models, it is worth highlighting that this difference in approach is predominantly attributable to differences in policy between the jurisdictions (i.e. a policy decision by the UK government not to levy real tolls on road users), rather than any underlying fundamental structural or commercial impediments in the two markets[3].

Against this backdrop, three main generations of payment mechanisms for service payments have evolved over time. In chronological order, these are:

- Shadow tolls;
- Availability payments; and
- Active Traffic Management.

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[1] Incorporating both PPPs and the predecessor in the UK, the Private Finance Initiative (PFI), which continues to form a subset of PPPs in the UK market.
[2] With only isolated exceptions (being a number of toll bridges and the Midlands Expressway).
[3] In addition to the apparent differences in the underlying philosophy regarding direct pricing for infrastructure (i.e. funding from the imposition of tolls on users rather than through general taxation revenues), the focus on toll roads within Australia is also partly attributable to the responsibility for significant elements of the road network being vested in the States. As the States lack the ability to impose direct taxes the imposition of tolls provides the States with an additional source for funding for new infrastructure. In the UK, much of the equivalent responsibility for the road network is vested in central government (which retains taxation powers). Thus, it can be argued that in the UK environment the philosophical decision to fund projects through tolls or tax revenues is simplified.

The evolution of these mechanisms in the UK context has been principally driven by evidence of each model's success in supporting the government's service objectives and delivering value for money:

- Shadow toll mechanisms were the first adopted and prevailed for all of the projects undertaken in the earlier half of the 1990s. However, their ability to maximise value for money was called into question by the National Audit Office (NAO) in the UK;

- Availability payment mechanisms consequently emerged and experienced increasing popularity during the latter half of that decade. While these projects delivered improved value for money relative to the shadow toll model, they were found to engender a passive approach to road management by Concessionaires;

- In response, Active Traffic Management mechanisms were developed and have been adopted in a limited number of more recent projects. While anecdotal evidence suggests that these projects have offered similar levels of value for money compared to the availability based projects, their success in driving more active traffic management is yet to be proven (as the relevant projects have not yet completed construction).

While these mechanisms have developed over time, it is important to note that they are not necessarily mutually exclusive. That is, a number of projects have included a combination of both shadow toll and availability payment mechanisms contributing to the overall service payment profile of the Concessionaire. Most recently, the A249 Stockbury to Sheerness project in the UK has adopted a combined Active Traffic Management and availability based payment mechanism.

More detailed discussion on each of these three payment mechanism options is provided below. As indicated above, in the absence of clear identification of the precise service objectives of the State for the Project, we have focussed our discussion on the general project objective of maximising potential value for money.

4. Shadow Tolls

4.1 Example Shadow Toll Projects

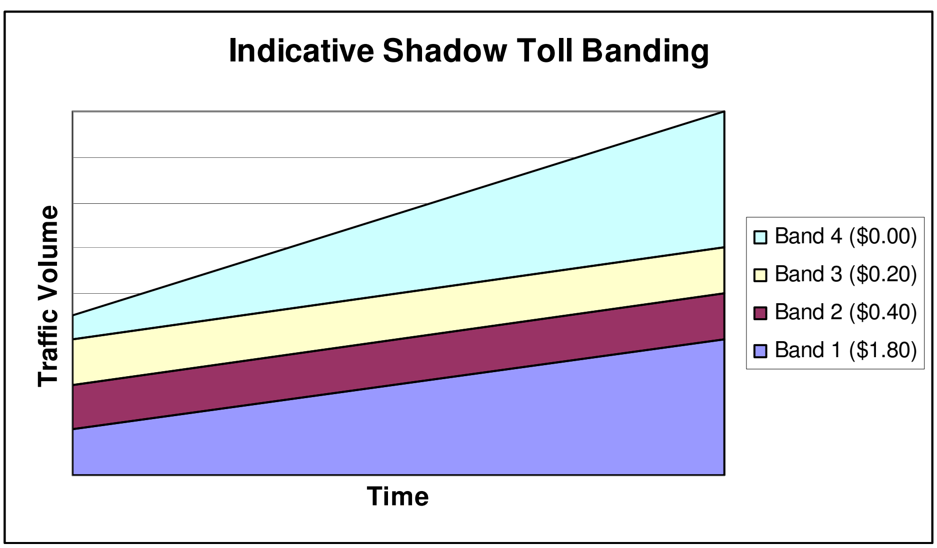
Project	Location
M1-A1 Motorway Link, Leeds	UK
A1(M) Alconbury to Peterborough	UK
A69 Newcastle to Carlisle	UK
A417 / A419 Swindon to Gloucester	UK
A50 / A564 Stoke to Derby Link	UK

A30 / A35 Exeter to Bere Regis	UK
M40 Junctions 1 - 15	UK
A168 / A19 Dishforth to Tyne Tunnel	UK
Costa de Pratar	Portugal
M45	Spain

4.2 Description

In simple terms, a shadow toll payment mechanism for the Project would entail the State paying the Concessionaire Service Payments calculated on the number (and type) of vehicles using the road in a payment period. Conceptually, this is a toll road where the Concessionaire collects tolls from the State rather than the actual infrastructure users.

Shadow toll structures formed the backbone of the early DBFO[4] roads projects in the UK market (initially pursued as an interim step to transitioning to the imposition of real tolls in later projects)[5]. A key distinguishing feature of these structures, relative to a real toll equivalent, is that the shadow toll rate varied with the volume of traffic, rather than being a flat toll rate for each vehicle irrespective of the volumes within that vehicle category. Specifically, bidders for the UK projects were requested to bid up to four separate toll rates for four bands of traffic volumes[6]. The main restriction was that the toll rate for the uppermost band of traffic volumes was to be set at nil, thereby effectively capping the government's financial exposure to paying tolls to the Concessionaire, even if traffic volumes were well above expectations. This structure is illustrated in the diagram below.



[4] Design, Build, Finance, Operate.
[5] Shadow toll structures were also popular in Finland, Portugal and Spain.
[6] The bidders also bid separate rates for long (heavy) vs. short (light) vehicles.

Experience from the DBFO roads projects showed that bidders typically adopted a bidding strategy of setting the lower traffic volume band at a conservative traffic forecast level (i.e. a high certainty of achieving those traffic volumes), and applying a toll rate which would be sufficient to service project debt, but not provide a return to equity. The next bands were set at levels designed to provide a return to equity, but subject to an increased level of uncertainty in relation to the realisation of those traffic volumes. The diagram above illustrates this concept, where Band 1 revenue (traffic and tolls) would cover operating costs and debt service, Bands 2 and 3 would offer a return to equity, and Band 4 would cap the government's liability to pay shadow tolls.

4.3 Risk Transfer and Value for Money

In principle, shadow toll structures enable the State to transfer traffic risk to the Concessionaire without imposing real tolls on road users. Basically, if traffic volumes increase, the level of revenue payable by the State to the Concessionaire as a shadow toll also increases (and vice versa). However, the State can limit its exposure to high traffic volumes through a capping arrangement on shadow toll payments.

However, the extent of real risk transfer for the State will depend on the payment structure for the shadow tolls bid by the market. For instance, if a bidder heavily weights the value of shadow tolls towards a very conservative level of traffic in the lower bands, the level of traffic risk transferred by the State is limited. Contrast this to a situation where a bidder weights the value of shadow tolls more evenly across the bands, such that it has a higher financial exposure to lower traffic levels. Consider the following illustrative example.

Traffic Scenario	Bid 1	Bid 2
	Traffic Volumes Band 4: 40,001 - Band 3: 30,001 – 40,000 Band 2: 20,001 – 30,000 Band 1: 0 – 20,000 *Toll Rates* Band 4: $nil Band 3: $0.20 Band 2: $0.40 Band 1: $1.80	*Traffic Volumes* Band 4: 45,001 - Band 3: 30,001 – 45,000 Band 2: 15,001 – 30,000 Band 1: 0 – 15,000 *Toll Rates* Band 4: $nil Band 3: $0.10 Band 2: $0.20 Band 1: $2.50
Scenario 1 – Traffic = 45,000	State payment = $42,000	State payment = $42,000
Base Case – Traffic = 35,000	State payment **= $41,000**	State payment **= $41,000**
Scenario 2 – Traffic = 25,000	State payment = $38,000	State payment = $39,500

What the above example illustrates is that the second bidder, by weighting its toll structure towards lower (i.e. more cautious) traffic levels, has accepted less traffic risk from the State, even though the forecast toll payment from the State is equivalent under both bids.

It is also questionable whether transferring revenue (traffic) risk to the Concessionaire under a shadow toll arrangement is fully consistent with the fundamental risk transfer principle of allocation of a risk to the party best able to manage the risk. Specifically, unlike with real tolls, the toll pricing bid in relation to shadow tolls has no impact whatsoever on the traffic flows experienced on the project road.

This risk management issue was at the centre of the criticisms of shadow toll payment structures by the UK NAO which ultimately led to the shadow toll model being largely replaced by availability based payment mechanisms. While the early shadow toll projects in the UK delivered value for money savings of the order to 15% relative to traditional procurement, on balance, in its review of the DBFO roads program in the UK[7], the NAO determined that the shadow toll payment mechanism had likely restricted the level of value for money delivered by the projects. The key drivers of this conclusion were:

- Transfer of revenue (traffic) risk to the Concessionaires when they had little means of directly influencing traffic volumes through pricing mechanisms;
- The adoption by bidders of conservative traffic positions in bidding toll bands (i.e. tolls weighted towards lower traffic levels), minimising the level of effective risk transfer; and
- Capping service payments through a nil toll on the top traffic band prevented the Concessionaire from recovering increased maintenance costs associated with increasing traffic levels, being a risk priced into the bids.

The NAO concluded that the premium paid for transferring traffic risk to the Concessionaire under a shadow toll payment mechanism was therefore likely to outweigh the benefit to the government (i.e. a negative impact on value for money). It should be noted that this does not mean that there was no value to money delivered by each of these projects, just that the payment mechanism could have been better structured to enhance the value for money delivered.

4.4 Support for Possible Project Objectives

The following table provides a very high level guide as to the broad level of support the shadow toll payment mechanism has for various potential project objectives.

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[7] "The Private Finance Initiative: The First Four Design, Build Finance and Operate Roads Contracts".

[To be discussed.]

Indicative Objective	Comments
Maximising value for money	• Evidence of an average 15% saving over traditional delivery (for UK projects)
Level of risk transfer	• Traffic risk transferred • Conservative traffic band pricing can restrict risk transfer
Allocation of risks the concessionaire can control	• Unable to manage traffic risk through pricing • Exposed to high traffic volumes (i.e. unmatched maintenance costs)
Direct incentives to improve levels of road service for users	• To some degree (i.e. to increase volumes for shadow tolls), but may be incentive to discourage traffic levels in the higher traffic bands
Understood and accepted by market – international	• Demonstrated and well understood, but a trend away from full shadow toll structures
Understood and accepted by market – Australia	• Not proven in the Australian market
Facilitates flexibility in managing surrounding network	• Concessionaire will require protection from the impact of changes to the surrounding road network

5. Availability Payments

5.1 Example Availability Payment Projects

Project	Location	Comments
A13 Thames Gateway	UK	Also includes shadow tolls and safety payments
A130 Bypass (A12 – A127)	UK	Also includes shadow tolls
E39 Klett-Baardshaug	Norway	Also includes shadow tolls and safety payments

5.2 Description

Availability payment structures are an alternative payment mechanism where the State identifies that it is paying a Concessionaire for making a service available. In the case of a roads project, this means that the State is paying the Concessionaire for the road being open to the public and available for travel.

Effectively, the structure of a payment mechanism based around availability criteria sets a maximum regular payment which can be received from the State, but which is subject to a schedule of abatements according to specified availability criteria. The structure of these deductions to the maximum availability payment reflects the level of risk transfer inherent in the commercial arrangements. However, payment mechanisms based around availability payments do not transfer volume risk to the Concessionaire.

In structuring service payments under an availability payment mechanism, there are two key factors to consider.

- The definition of unavailability (i.e. the types and, in particular, causes of unavailability which may lead to abatement of the Service Payment: the latter being key to the extent of risk transfer to the Concessionaire); and

- The weighting (or severity) of deductions for different timing or degrees of unavailability.

It should also be noted that the concept of unavailability does not necessarily require that the entire road is unavailable for use, or even that a specific section of the road is fully unavailable. Defined unavailability can also be triggered by partial lane closures or matters of “deemed unavailability”, such as a failure to meet minimum road condition measures.

Deemed unavailability covers circumstances where the road may be notionally open for travel, but is of a standard where such travel is either hampered or unsafe. The purpose of this mechanism is to prevent a Concessionaire from not closing a section of road for necessary works in order to avoid incurring deductions to its availability payments.

Broadly, to recognise that the State has specific priorities and objectives in relation to the service offered by a road, the availability criteria can be structured to incentivise the Concessionaire to manage unavailability in a manner which is consistent with the State's priorities. For instance, in the UK it is not uncommon to see deductions to availability payments weighted according to:

- the duration of the period of unavailability, in order to incentivise the Concessionaire to minimise delay in taking remedial action;

- the specific section of the road which is unavailable, in order to incentivise the Concessionaire to focus remedial efforts on those sections of road upon which the government places the most importance;

- the time of the day or week, in order to incentivise the Concessionaire to manage unavailability (e.g. planned closures) around periods when the availability of the service is of most importance (e.g. avoiding peak periods); and

- a 'ratchet' mechanism based on what portion of the road capacity within a section is unavailable and/or the frequency of unavailability, in order to incentivise the Concessionaire to minimise the overall impact of unavailability on the level of service provided to users (e.g. by aiming for progressive reopening of the road as an issue is remedied or making an investment in significant new works to overcome a persistent design fault).

Clearly, the structuring of the availability criteria is relatively flexible and able to be tailored to the specific objectives of the State in relation to the road (subject to the overriding principles that the payment mechanism must be based on clear, measurable and objective measures).

5.3 Risk Transfer and Value for Money

In contrast to the earlier shadow toll mechanisms, which transferred a degree of volume risk to the Concessionaire while limiting its ability to manage volume, availability payment mechanisms are focussed on limiting risk transfer to the Concessionaire to those aspects of road operation which it is able to control.

However, there are some exceptions to this general principle. In the UK roads sector, some significant differences have been observed in the level of risk transfer in relation to service availability. This has been principally evident in the causes of lane closures for which the Concessionaire is liable for abatements.

As an indication, the following table summarises the availability criteria against which the Concessionaires are assessed for the A13 and A130 roads in the UK. This highlights that significant additional risk transfer has been included under the A13 arrangements.

Availability Criteria	A13	A130
Planned lane closures	✓	✓
Unplanned lane closures	✓	✓
Closures by utility providers	✓	✓
Closures due to accidents	✓	✗
Blockages due to incidents (e.g. illegal parking)	✓	✗
Road surface failures (e.g. potholes) – "deemed unavailability"	✓	✗

It is arguable that, in a number of cases outlined in the above table, the cause of unavailability may be outside of the reasonable control of the Concessionaire (e.g. unscheduled closure by a utility provider). Also, specifically in relation to the more aggressive risk transfer inherent in the A13 structure, the Concessionaire may have only limited ability to directly control the occurrence of closures or blockages due to accidents or illegal parking. Nevertheless, inclusion of these criteria in the availability payment structure does incentivise the Concessionaire to deal promptly with the issue (e.g. accident or illegal parking) once it has occurred in order to minimise the period or impact of unavailability.

It is important to reinforce that under the availability payment mechanisms for both the A13 and A130, there is no volume risk transfer, unlike with the earlier pure shadow toll payment structures[8]. While the road availability aspects of the project form the central part of potential payments to the Concessionaire, to encourage management of road safety projects have also included a safety adjustment (positive or negative) to the Concessionaires' payments. This adjustment was based around the frequency and severity of accidents on the road, relative to the frequency and severity of accidents on similar roads, with the total amount of the adjustment capped for any one payment period.

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[8] Note, both the A13 and A130 payment structures included a *blend* of availability payment and shadow toll based service payments so that, overall, there was some transfer of volume risk to the concessionaires. The driver behind this blending approach was the desire to transfer sufficient risk to achieve an off balance sheet treatment for the Government, rather than a strong belief in the value for money potential of shadow toll mechanisms.

For the purposes of outlining the risk transfer implications of an availability payment structure per se, it is appropriate to highlight that the transfer of volume risk is not a central principle.

Anecdotal evidence has suggested that the focus on transferring those risks to the Concessionaire which it is better able to directly control has resulted in better value for money outcomes for the relevant DBFO roads projects in the UK, in comparison to the earlier shadow toll road projects. It is understood that the availability based projects have delivered value for money savings in the range of 15 to 20% (compared to an average of 15% for the shadow toll roads). While this value for money is considered to have been predominantly driven by private sector efficiencies and whole-of-life costing, cheaper pricing of private sector finance in response to greater comfort with the level of risk transfer was also a factor[9].

It is also relevant to note that the availability payment option is a relatively simple payment mechanism structure for the Concessionaire (and the State) to understand and, hence, to model, price and manage. This may assist in avoiding risk premia which could be included for more complex payment mechanisms which are inherently more difficult to forecast.

However, as the requirement to manage various traffic incidents or deemed unavailability factors increases, the complexity of systems required to monitor the road will also increase. Thus, the costs and risks associated with monitoring compliance with very complex payment mechanism structures should also be taken into account when designing the payment mechanism.

One key disadvantage of the availability payment mechanism is that it is essentially based around passive management of the transport service (notwithstanding that the events which give rise to an exposure to abatement for unavailability may require a degree of active management of the road). In other words, provided the road is open and available for use in accordance with its design, the concessionaire will receive its maximum service payment and has no incentive to strive towards improving road performance in terms of traffic flow or the standard of services offered to users.

5.4 Support for Possible Project Objectives

The following table provides a very high level guide as to the broad level of support the availability payment mechanism has for various potential project objectives.

[To be discussed.]

Indicative Objective	Comments
Maximising value for money	• Evidence (anecdotal) of a further improvement on

[9] It is relevant to note that the A130 concessionaire has recently completed a major refinancing. It is understood that the requirement for this refinancing was not associated with the availability payment mechanism, but rather low traffic demand resulting in revenues from the shadow toll portion of the total service payment structure being significantly less than originally forecast.

Indicative Objective	Comments
	the average 15% saving over traditional delivery observed for shadow toll mechanisms (for UK projects)
Level of risk transfer	• Traffic risk not transferred (except to the extent that the overall payment mechanism may comprise a combination of availability and shadow toll elements)
Allocation of risks the concessionaire can control	• Focus on management of road condition and maintenance works, together with efficient design • Some structures incentivise quick remedial action rather than risk prevention (e.g. clearing breakdowns)
Direct incentives to improve levels of road service for users	• Little incentive to actively improve road service beyond the road being fully available for use (although may be some incentives to improve road safety)
Understood and accepted by market – international	• Demonstrated and well understood
Understood and accepted by market – Australia	• Not proven in the Australian market
Facilitates flexibility in managing surrounding network	• Unlikely to protection from changes to the broader transport network (except to the extent that the overall payment mechanism may include a shadow toll element)

6. Active Traffic Management

6.1 Example Active Traffic Management Projects

Project	Location	Comments
A1 Darrington to Dishforth	UK	Under construction
A249 Stockbury to Sheerness	UK	Under construction

6.2 Description

Active Traffic Management, or congestion based, payment mechanisms are the most recent development in the international market for Service Payment based roads projects. To date, this model has only been adopted on two projects that have achieved financial close, neither of which has as yet commenced operations. Both projects are located in the UK. Thus, while the model has demonstrated a level of acceptance in the UK market (the most advanced market for Service Payment based PPP roads projects) it remains at the leading edge and is yet to be tested in practice.

Active Traffic Management payment mechanisms are broadly an evolution of the availability payment mechanisms which aim to take the alignment of the Concessionaires' financial interests with the State's primary transport objectives one step further. An Active Traffic Management payment mechanism bases the level of payments from the State to the Concessionaire not only on a road being open and available for use, but on the road delivering a specified standard of transport service or performance.

The most obvious area of difference between the Availability Payment and Active Traffic Management payment mechanisms concerns road congestion. A perfectly maintained road which is available for travel, but which is heavily congested, is unlikely to be fulfilling the State's transport service objectives. Therefore, rather than linking a Concessionaire's remuneration to the availability of the road, Active Traffic Management mechanisms link Service Payments to the level of congestion (e.g. assuming defined capacity of the road is available, payment is linked to the average travel times/speeds being achieved for defined volumes of traffic on the road). The Concessionaire is therefore incentivised to design a road which will limit 'pinch points' for traffic congestion (e.g. length of merging lanes, etc) rather than a focussing only on designing a road which is simple to maintain.

In a very general sense, the congestion based measures of determining service payments are based around a specified target speed (or travel time) for the road and a deemed road capacity. The commercial arrangements governing when a Concessionaire will incur abatements to, or earn a bonus on, its Service Payments then relate to how the performance of the road is managed to optimise average traffic speed (or travel times) in the context of actual traffic demand relative to the deemed road capacity.

For instance, the following summary arrangements apply for the A1 Darrington to Dishforth road in the UK.

Average Speed	Traffic <= Deemed Capacity	Traffic > Deemed Capacity
Road closed (or deemed closed)	• Nil service payment	• Nil service payment
Less than 67% of Target Speed	• Nil service payment (if traffic <= 80% of deemed capacity) • Reduced service payment (if traffic > 80% of deemed capacity)	• Full service payment
Between 67% and 100% of Target Speed	• Reduced service payment • Full service payment (if 100% of Target Speed)	• Bonus service payment (if traffic > 110% of deemed capacity) • Bonus subject to cap
Greater than 100% of	• Full service payment	• Bonus service payment (if traffic

Target Speed		> 110% of deemed capacity) • Bonus subject to cap

Clearly, in order to minimise congestion on the road the Concessionaire must not only focus on good road design, but it must also manage issues which overlap with some of the factors raised in earlier availability payment structures, including:

- managing scheduled maintenance around peak periods;
- negotiating with utility providers over closure arrangements;
- increasing safety (to minimise accidents);
- increasing response times for accidents and breakdowns; and
- managing pavement quality to improve ride quality and, therefore, travel speeds.

In addition, where allowed the Concessionaire is incentivised to use effective traffic management techniques (such as variable speed restrictions, ramp metering, variable lane utilisation during peak periods, etc).

Apart from linking the value of service payments to congestion levels, active management structures also have a focus on safety performance. Similar to earlier Availability Payment mechanisms, this is achieved by also tying the value of service payments made to the concessionaire to KPIs such as the frequency and severity of accidents on the road, relative to the frequency and severity of accidents on similar roads.

6.3 Risk Transfer and Value for Money

Notwithstanding that it falls short of transferring demand risk to the Concessionaire, the degree of risk transfer supported by Active Traffic Management payment mechanisms is significantly greater than that achieved under the more established availability payment mechanisms. In addition, this model potentially offers a much closer alignment of the Concessionaire's financial/commercial interests with the service objectives of the State. Specifically, the payment mechanism focuses on the quality and standard of the service outputs from the road (i.e. standard of transport service), rather than on the quality and standard of the input to the transport services (i.e. the road availability).

Unlike shadow toll payment mechanisms, the Concessionaire does not accept full volume risk in the sense that its Service Payments are proportional to traffic volumes. However, it accepts more volume risk than under an availability based mechanism to the extent that its service payments are impacted by the standard of the service the Concessionaire offers within a particular traffic volume environment. For example, a Concessionaire under and Availability Payment mechanism would receive its full payment irrespective of traffic volumes as long as the road is available (even if heavily congested). However, under an

Active Traffic Management mechanism, the level of its payment would depend on the standard of travel service provided on the road (e.g. travel times), which in turn would be influenced by traffic volumes.

As the Active Traffic Management payment mechanism approach is a relatively new development in the area of service payment structures for roads, there is no independent publicly available information as to the value for money performance of projects adopting the payment mechanism. However, anecdotal evidence from the UK suggests that the market broadly accepts the concepts underlying the payment mechanism without significant improvements to risk pricing over availability payment mechanisms.

Clearly through, the actual performance of this payment mechanism remains to be tested into the operational phase of a project.

In measuring performance based on broad congestion and safety criteria, the State needs to be conscious of aspects of road congestion or safety over which the Concessionaire is unlikely to have any significant control. If the Concessionaire's Service Payments are going to be exposed to any such issues, bidders can be expected to attach a premium to this risk, thereby potentially reducing value for money in the transaction. A key example of such a circumstance is where the congestion on the road is caused by incidents or congestion on the complimentary road network (i.e. destination roads), which 'spills over' onto the Concessionaire's road.

6.4 Support for Possible Project Objectives

The following table provides a very high level guide as to the broad level of support the Active Traffic Management payment mechanism has for various potential project objectives.

[To be discussed.]

Indicative Objective	Comments
Maximising value for money	• Evidence (anecdotal) of value for money similar to availability payment mechanisms
Level of risk transfer	• Traffic risk not directly transferred • Relatively high level of risk transfer – payments proportional to level of transport service provided to users for defined traffic volumes
Allocation of risks the concessionaire can control	• Broadly transfers risks concessionaire can manage • Needs to assess service levels (e.g. congestion) in the context of traffic volumes
Direct incentives to improve levels of road	• Significant alignment of the concessionaire's

Indicative Objective	Comments
service for users	incentive to actively manage the road to maximise service levels with Government interests
Understood and accepted by market – international	• Still relatively unproven, but appears to have been reasonable market acceptance of the concept on two projects
Understood and accepted by market – Australia	• Not proven in the Australian market
Facilitates flexibility in managing surrounding network	• Likely to require some protection in relation to changes on the surrounding network (e.g. to the extent it impacts congestion on the project road)