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*Pricing principles  
for infrastructure  
services at Perisher*

*Prepared for IPART*

*Centre for International Economics  
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# Contents

<b>1</b>	<b>Background</b>	<b>1</b>
	Infrastructure services in Perisher	2
	The Infrastructure Services Strategy	3
<b>2</b>	<b>How well does the current pricing approach perform?</b>	<b>4</b>
	The current pricing arrangements are fairly arbitrary	5
	Current charges do not recover total costs	8
	There are cross subsidies across different customers	9
	There are limited price signals in the prices	10
<b>3</b>	<b>What are the objectives of pricing?</b>	<b>12</b>
	Recovering the full cost of service provision	12
	Limiting cross subsidies across customer groups	13
	Providing signals for efficient levels of consumption	14
	Minimising the costs of administration and ensuring transparency	14
	Managing volume-related risks	15
<b>4</b>	<b>Understanding the nature of costs to be recovered</b>	<b>17</b>
	What are the key cost drivers?	17
	Should existing infrastructure costs be recouped?	18
<b>5</b>	<b>Developing a pricing framework</b>	<b>22</b>
	Recovering variable costs	22
	Recovering fixed costs	29
	Recovering development-related costs	33
	Improved pricing versus administrative simplicity	40
	<b>References</b>	<b>45</b>

**Boxes, charts and tables**

1.1	Existing services provided by NPWS at Perisher	2
2.1	Perisher lessees	4
2.2	Summary of charges levied at Perisher	5
2.3	Comparison of annual charges	7
4.1	Characteristics of key cost drivers	18
5.1	Cost of infrastructure provision by NPWS over next 30 years	42
5.2	Degree of cross subsidisation associated with a simplistic pricing regime	43

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# 1

## *Background*

THE PERISHER RANGE RESORTS (PERISHER) are located in the Kosciusko National Park in southern New South Wales. The resort facilities are established on areas leased from the National Parks and Wildlife Service (NPWS). NPWS also provides a range of municipal services including water and sewerage, solid waste disposal and roads to lease holders.

The New South Wales government has endorsed the expansion of Perisher through the development of an additional 1320 bed spaces. Around 800 of these additional bed spaces will be in a new Village Centre development with the remaining beds sold to existing leaseholders.

To support this expansion in capacity, NPWS has developed an Infrastructure Services Strategy (ISS) that lays out a range of capital works required to service the new development and raise standards to comply with licence conditions and legislative requirements. The ISS is currently costed at \$168 million of capital and operating expenditure over 30 years. The New South Wales government has already allocated some funds in the order of \$30 million to cover urgent works.

The Treasurer has requested that the Independent Pricing and Regulatory Tribunal (IPART) undertake a review of the Infrastructure Services Strategy with a view to establishing a full cost recovery framework including cost reflective pricing and funding arrangements. IPART has commissioned CIE to provide advice on appropriate principles for setting prices for municipal services at the Perisher. These pricing principles will provide the link between the identified costs of the capital works program and IPART's recommended set of prices and charges to apply from 1 July 2005. The capital works costs are currently being reviewed by an independent consultant.

In line with the terms of reference for IPART, the key tasks that need to be completed in developing pricing principles are:

- the development of a pricing framework that incorporates full cost recovery principles and considers the beneficiaries from the capital works program;
- consideration of the appropriateness of recovering, through municipal charges, the costs of existing infrastructure assets and expenditure by the New South Wales government ; and
- consideration of the appropriateness of recovering the additional infrastructure costs required to support the expansion of the Perisher Range Resorts' accommodation and facilities through a developer charges framework.

This report presents CIE's analysis on these issues.

## Infrastructure services in Perisher

The ISS identifies a number of infrastructure services that are provided at the Perisher Range Resorts. These services are summarised in table 1.1.

### 1.1 Existing services provided by NPWS at Perisher

<i>Service</i>	<i>Nature of service</i>
<b>Primary Services</b>	
Water and wastewater	NPWS owns and operates water reticulation system at Perisher Valley (PV), Smiggin Holes (SH) and Guthega. PBL owns and operates supply to Blue Cow (BC) Water system comprises reticulation system with ultraviolet irradiation. NPWS owns and operates sewerage system to all areas. System comprises a number of pumping and transfer stations and Perisher Sewerage Treatment Plant.
Solid waste	NPWS provide bulk bins at PV, SH and Guthega. PBL manages BC waste. Putrescible waste goes to landfill, recyclable material to MRF or Visy Recycling. Lessees or a private contractor transports individual bins to NPWS bulk bins.
Internal roads	NPWS owns in-resort roads and bridges. NPWS Resorts Section manages internal roads, including snow clearing during winter and traffic management. RTA owns ((and manages) Kosciuszko road and the resort link between SH and Guthega. Most roads are unsealed. BC access road managed by PBL.
Stormwater	Stormwater drainage infrastructure incorporated in road infrastructure. NPWS responsible for management.
Communications	NPWS owns and operates a communications tower on Mt Perisher used for transmitting radio signals between infrastructure facilities, NPWS offices and staff cars. Emergency services also use tower on fee-for-use basis. Telecommunications privately operated by telecoms companies.
<b>Secondary services</b>	
Municipal Service Staff Office and workshop	Depot services for Municipal services staff. Part of ground floor used as visitor/information centre for snow season.
Public facilities and amenities	NPWS subsidises operation of Australia Post shop at Corroburee Lodge. NPWS maintains boom gate at PV, trail heads and walking tracks and some road name and directional signs.
Street furniture/lighting	NPWS provides some street lighting at Guthega.
Transport	Private contractor (under licence from NPWS) provides oversnow/4WD passenger and freight transport.
Medical centre	Medical centre is rented from PBL on commercial terms. NPWS tenders out provision of services for two ski seasons. Subsidised accommodation provided for medical staff.

Source: NPWS (2002).

A number of these services such as electricity, telecommunications and gas are provided by private or other independent providers. The focus of the Tribunal's review is on services provided by NPWS.

## The Infrastructure Services Strategy

The Perisher Range Resorts Master Plan is projecting peak day visitors to expand from 16 000 to 25 000. The ISS developed by NPWS maps out the required infrastructure works to support the growth in day visitors and overnight stayers and also upgrade existing infrastructure to meet current minimum standards.

The total cost of the ISS is estimated to be in the order of \$168 million over 30 years.<sup>1</sup> Capital works relating to NPWS's areas of responsibility can be broadly grouped into the following categories.

- Water – relating to the expansion of storage capacity, new treatment plant, extension and replacement of mains.
- Sewerage – relating to the upgrade of the sewage treatment plant and replacement of mains.
- Solid waste management – relating to closing and rehabilitating existing garbage tip, the securing of new space in a regional landfill site, improving collection facilities and renewing bins and equipment.
- Roads – relating to the paving of unsealed roads and improvement in stormwater management system.
- Administration – relating to the relocation of existing municipal workshop to accommodate the construction of the new village centre development. This will involve construction of a new facility and demolition of the existing workshop.
- Amenities – relating to capital works for parking and traffic control, freight and medical services, NPWS information centre and services such as day visitor litter bins, vehicle pick-up and set down shelters and an emergency assembly shelter.

The capital works are a mixture of on-going operating and maintenance costs, growth-related work and backlog works required to raise standards.

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<sup>1</sup> The total cost review will establish whether this estimate is appropriate.

## 2

## *How well does the current pricing approach perform?*

LESSEES AT PERISHER CURRENTLY PAY A RANGE of charges to NPWS as part of their lease obligations. There are 145 primary leases at Perisher (table 2.1). These are generally for accommodation – either ski clubs (not for profit sporting clubs), commercial hotels and lodges, or apartments. There are also numerous commercial retail sub leases, such as food and beverage outlets, souvenir shops, clothing outlets, ski equipment hire, pharmacy, supermarket post office etc. Perisher Blue (the major lessee at Perisher) has approximately 30 sub leases split between Perisher Valley, Smiggin Holes and Guthega; Perisher Manor (in Perisher Valley) has 6 sub lessees; while the Smiggins Hotel has 5 sub lessees.

The current system of charges levied on lessees has been in place for a considerable period of time with little modification. Understanding the current regime, its outcomes and its problems is a key step in identifying key issues the new pricing principles should seek to address.

### 2.1 Perisher lessees

<i>Lease type</i>	<i>Perisher Valley</i>	<i>Smiggin Holes</i>	<i>Guthega</i>	<i>Total lease</i>
	Number	Number	Number	Number
Hotels	4	1	1	6
Commercial Lodges	15	7	0	22
Ski Clubs	66	14	9	89
Apartment complexes	4	0	0	4
Service premises	5	0	0	5
Staff accommodation	9	5	3	17
NPWS Cottages	0	1	0	1
Retail	0	1	0	1
<b>Total</b>	<b>103</b>	<b>29</b>	<b>13</b>	<b>145</b>

Source: A. Henchman, NPWS, personal communication, 26 October 2004.

## The current pricing arrangements are fairly arbitrary

Table 2.2 summarises the key charges levied by NPWS on lessees and visitors to the Perisher resort. These charges can be grouped into two categories:

- charges for municipal services and infrastructure
- general NPWS charges.

### 2.2 Summary of charges levied at Perisher

Charge	Use of funds	Revenue collected		
		2001/02	2002/03	2003/04
		\$m	\$m	\$m
Municipal service charge	Provision of municipal services (water, sewerage, roads)	2.4	2.4	2.4
Special capital works levy	Contribution for upgrade for sewerage infrastructure	3.3	-	-
Park entry fee	Revenue retained by NPWS for general program expenses	Confidential	Confidential	Confidential
Lease payments by tenants (rents)	Revenue retained by NPWS for general program expenses	Confidential	Confidential	Confidential

Source: NPWS.

### *Charges for municipal services*

The municipal service charge (MSC) is the principal charge for recovering the cost of providing municipal services. The MSC recovers around \$2.4 million a year and is set to recover NPWS operating budget for the year, including maintenance and minor renewal works. This budget covers the full range of municipal services provided by NPWS – water, sewerage, solid waste disposal, public facilities and amenities, street signage and furniture etc.

The MSC amount is calculated from a bottom up cost allocation. Any costs that can be attributable to particular localities in the resort (for example, Perisher, Smiggins Holes, Guthega, Blue Cow) are allocated to that locality. The remaining general costs are recovered from all premises at the Perisher Range. The allocated costs are then converted to charges on lessees on the following basis.

- Costs attributed to a particular village or locality are split between the premises in that area.
- General (unallocated) costs are split between all the premises in the Perisher Range.

- Costs are recovered on the basis of bed allocations. A base obligation is determined based upon the number of beds and ranges between \$300 (Guthega) and \$600 (Perisher). On top of this base obligation, *commercial* premises pay a historically determined percentage 'special levy' that increases their base payment to take account of day visitors.<sup>2</sup> Cost associated with day visitors are not currently being recouped from non-commercial premises (such as ski clubs) as these premises do not provide any services to day visitors and receive no revenue from them.

The historical allocation of the special levy has been in place since at least 1989. It was reviewed at that time by an independent consultant and found to be broadly consistent with the circumstances at the time.<sup>3</sup>

As part of its program to upgrade sewerage infrastructure, NPWS collected a one-off special levy to contribute to the cost of the sewerage capital works in 2001/02. As part of its conditions for funding, the government required leaseholders to contribute \$4.5 million toward the total costs of the upgrade. The levy was allocated across both existing and new beds. A total of \$3.3 million was collected through the levy from existing lessees (on existing beds). The remaining \$1.2 million is to be collected from the owners of the new bed allocation, once approved.

### *General national park charges*

In addition to the charges on lessees, visitors to the park also pay NPWS a park entry fee that is payable on every car entering the park (currently \$16 per car per day), every bus passenger (\$6.60 per adult) or per passenger on the Skitube (\$20 per person return, of which NPWS receives \$4.95<sup>4</sup>). These charges are part of the standard set of charges that NPWS requires visitors to pay across all its national parks. The funds raised from the park entry fee are retained by the NPWS to contribute to the funding of its general (statewide) budget.<sup>5</sup>

The lease or rental payments are paid to NPWS by leaseholders. For non-commercial premises payments are set at 6 per cent of the statutory land

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<sup>2</sup> A. Henchman, NPWS, personal communication, 6 September 2004.

<sup>3</sup> K. Charnock, NPWS, personal Communication, 7 September 2004.

<sup>4</sup> This is equivalent to 75 per cent of the NPWS adult bus passenger park entry fee.

<sup>5</sup> In effect, this is equivalent to these funds being allocated to consolidated revenue as the retained revenue reduces the need for a direct allocation of budget funds (the same applies to revenue raised through park entry charges).

## 2 HOW WELL DOES THE CURRENT PRICING APPROACH PERFORM?

valuation (SLV) set by the Valuer General.<sup>6</sup> Commercial premises with 75 beds or under pay 6 per cent of the SLV, while premises with in excess of 75 beds pay the greater of 6 per cent of the SLV or a percentage of audited gross receipts (turnover). Lease payments are a standard charge paid by concession holders across NPWS's national parks. Lease payments effectively represent a degree of compensation, paid to the community via the government, for any alienation and loss of amenity arising from the public foregoing access rights to the leased area. The lease payments are retained by the NPWS to contribute to the funding of its general budget.

NPWS treats these lease payments as a return to the national park asset. With revenue being allocated to NPWS general budget there is no direct link to the provision of municipal infrastructure. However, it is possible that stakeholders view the lease payment as both a payment for the use of the national park asset and also a contribution to the establishment of municipal services infrastructure at the Perisher resort site. Indeed, a large number of submissions to this Inquiry have made the point that the rental is supposed to be for 'land fit for purpose as a ski club', and this should include meeting the lessee's share of capital costs.

This perception could be enhanced by the fact that annual rentals and charges at Perisher are higher than at the other main resorts (table 2.3).

The issue of rentals, and what they represent, is discussed further below

### 2.3 Comparison of annual charges 2003 or 2003-04

Charge	NSW resorts		Victorian resorts		
	Perisher	Thredbo	Mt Buller	Falls Creek	Mt Hotham
Park entry	\$16/car/day \$6.60/adult bus \$4.95/Skitube	\$16/car/day \$6.60/adult bus	\$28/car/day + \$6-\$12 o/n stay \$8/adult bus	\$25/car/day \$13/car/day only \$6-9/adult bus	\$27/car/day \$10/person/via car \$9/adult bus
Municipal service charge	\$300-\$600/bed + special levy	\$350/bed	\$270/bed	\$420/bed	\$450/bed
Land rental <sup>a</sup>	6% of SLV	\$620/bed	3.5% of SLV	3.5% of SLV	3.5% of SLV
<b>Revenue collected</b>					
	\$m	\$m	\$m	\$m	\$m
Park entry	Confidential	Confidential	2.37	1.57	0.96
Municipal service charge	2.36	1.50	1.97	1.97	2.03
Land rental <sup>a</sup>	Confidential	Confidential	2.08	1.22	0.90

<sup>a</sup> In Perisher commercial premises pay the greater of 6 per cent of the SLV or between 2-12 per cent of audited gross receipts. The Victorian rent of 3.5 per cent of SLV resulted from negotiations between the Victorian Skill Association and the Alpine Resorts Commission. However, Victoria intends to move to a policy of market value, which overtime will likely result in rents rising to 5-6 per cent of the SLV (McCann Property and Planning (2004)).

Source: NPWS, McCann Property and Planning (2004), Mt. Buller RMB (2004), Mt. Hotham (2004) and FCRM (2004).

<sup>6</sup> Several submissions to the Inquiry noted that rentals were set at 6 per cent of SLV. See, for example, the Technology Ski Club's submission.

and has implications for whether it is appropriate to draw a 'line-in-the-sand' and recover historical capital expenditures in future charges.

## Current charges do not recover total costs

While NPWS sets the MSC to recover annual operating and maintenance costs, major capital works expenditures are generally not recovered in explicit charges on lessees or visitors to the resort area. In the past, these capital works have generally been funded out of consolidated revenues – through specific budget allocations/grants from Treasury. Some limited attempts have been made to recoup capital works costs from users (for example, the special sewerage and road paving levies).

Since around 2001, the government has provided additional capital works funding in the form of repayable grants – approximately \$20.3 million was provided in this form to commence water supply upgrade and other works. The expectation, is that these grants would be repaid, presumably through charges on users of the Perisher resort facilities. However, at this stage, there is no allowance in current charges to recoup these costs.

### *Have lessees indirectly covered capital works costs through rentals?*

An issue for the Tribunal is the extent to which lessees, in paying their lease rentals, have been either:

- paying a pure resource rent to the government so that the lease payment represents a return to the state's ownership of the national park resource – that is, the lease represents a right to operate premises in the national park only; or
- paying a bundled rent that includes a resource rent element and also a contribution toward the cost of providing municipal services – that is, the lease represents a right to operate premises in the national park and for those premises to have access to municipal services provided by NPWS.

In the first case, all of the rental payments would be attributable to the natural resource with no revenues being recovered toward the cost of providing infrastructure. In the second case, some component of the rental could be attributed to the cost of providing the municipal services infrastructure. However, just what proportion would be allocated to the natural resource and which to the infrastructure costs is likely to be difficult to ascertain.

NPWS leases grant lessees the right to occupy and use a specific parcel of land and any improvements located on that land for the purpose identified in the lease. Leases do not specify that the site is serviced. Leases do, however, expressly provide for the lessee to pay a range of costs and charges (as indicated below) that are in addition to the rent. The obligations of the lessee are covered by specific clauses and include obligations to:

- pay rent;
- pay community services charges (a contribution to the cost of providing and maintaining any community service in the Park);
- pay charges for utility services (the lessee is to pay all charges levied for services that may be supplied to the premises including charges for installation, connection, maintenance and engineering work associated with the provision of water, sewerage, other utilities, garbage disposal, telephone services etc); and
- pay rates and all applicable taxes (note that there is currently an exemption to the payment of rates under the Local government Act).

Given these obligations under the terms of the lease, the rent represents a net return to the lessor, with the lessee being responsible for contributing towards the recurrent and capital costs associated with servicing and maintaining services to the lease area.

The apparent misunderstanding by some lessees about what the lease payments represent likely stems from a lack of transparency in the charging regime as to exactly what service or property right the various charges levied at the Perisher Resort represent. A transparent charging regime that separately identifies each charge, and what that charge is for, should help to address the apparent misunderstanding surrounding lease payments.

## **There are cross subsidies across different customers**

The origins of the current municipal charge structure and its rules of allocating costs across different customer groups are not well known.<sup>7</sup> Further, these rules have not been revised for a considerable time. While the 'rules of thumb' employed in the current system may have been consistent with a 'fair' allocation of costs at the time the regime was established, any changes in usage and structure of commercial and non-commercial activities since then is likely to mean that cross-subsidies have

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<sup>7</sup> NPWS, *Perisher Range Resorts Infrastructure Services Strategy, Strategy Report*, March 2002. p. 32.

emerged among customers. For example, the special levy formulated to take account of the costs occurred by day visitors was last set on a (commercial) premise-by-premise basis in 1989. However, since then some lodges will have ceased serving day visitors, opting to cater for their overnight visitors only. Due to the static nature of the (historically) determined special levy, these lodges are still incurring the special levy despite the fact that they no longer cater to day visitors. Hence these lodges (or more precisely, their customers) are likely to be paying more for municipal services than their usage dictates and are offsetting the costs imposed by premises serving day visitors, who are paying too little.

One of the main issues raised is that day visitors are not contributing enough. The NPWS ISS Report indicates that bed owners do not feel that day visitors contribute enough.<sup>8</sup> NPWS's historical cost allocation methodology is at the heart of this issue.

Establishing whether current charges are cost reflective will need to be determined following completion of the total cost review. However, given that it has been some time since the methodology was determined, it seems likely there is a high probability that current charges do not accurately reflect the cost imposed on the system by various users.

It is also likely that the MSC is not cost-reflective within similar customer groups (for example, non-commercial lodges with the same number of beds but using different volumes of water). From an individual customer's perspective, the MSC is fixed and independent of that customer's use of the service. This means that to the extent there are differences in usage across customers, then customers would be imposing different costs on the system but paying the same MSC.

## **There are limited price signals in the prices**

A key deficiency in the current charge structure is the lack of any volumetric component to the price – particularly for water and sewerage and solid waste disposal. For these services in particular, the cost of providing these services varies with the intensity of use – greater water consumption means higher treatment and pumping/transportation costs and the greater solid waste increases disposal costs.

The current charge is a fixed charge and since it is independent of usage, there is no incentive for the customer to conserve their use of the service. It

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<sup>8</sup> *Ibid*, p. 32.

is very likely that without this conservation incentive, customers are using too much of the service – consuming too much water and disposing of too much waste. This in turn is likely to mean that operating, and potentially capital costs, for these services are higher than they need to be. NPWS considers that it is feasible for additional capital works on the water storage could be avoided through introduction of a usage based charge for water and other demand management efforts.<sup>9</sup>

The absence of a usage related component in prices also increases volume risk for customers and the infrastructure provider. Fluctuations in costs due variations in visitor numbers will not be matched by fluctuations in revenue. In good years with higher than expected visitor numbers, the infrastructure provider would face higher than expected costs without any variation in revenue and would bear any resulting loss. In bad years, lower costs would mean customers have paid too much under the current fixed charge arrangements. A usage-related component based on marginal costs would mean that revenues are automatically increased or decreased in line with marginal variations in cost, mitigating the impact the revenue risk for users and the infrastructure provider.

For other municipal services, such as internal road maintenance, public amenities etc that have costs that are more of a fixed nature, the lack of a usage-based component in the charge is likely to be less important.

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<sup>9</sup> A. Henchman, NPWS, Personal Communication, 31 August 2004.

# 3

## *What are the objectives of pricing?*

WHAT SHOULD THE TRIBUNAL be seeking to achieve in recommending prices for municipal services at Perisher? The current charging structure has a number of deficiencies, largely reflecting that its role as a cost-sharing/recovery mechanism rather than a structured set of prices for services provided at the Perisher Resort. That is, the current arrangements do not seek to strike a price per unit of service provided but simply seeks to apportion the total costs incurred at Perisher in an equitable manner.

Addressing the deficiencies of the current charging arrangements will require a pricing framework that:

- recovers the full cost of providing municipal services at Perisher;
- limits the extent of cross-subsidies across different customer groups;
- provides incentives for efficient consumption;
- is simple to administer and is transparent to customers and other stakeholders; and
- appropriate distributes volume-related risks across users, bed and other service operators at the resort and the infrastructure provider.

### **Recovering the full cost of service provision**

Full cost recovery means that prices are struck at a level that raises sufficient revenue to cover:

- operating and maintenance costs;
- capital costs (return of capital through depreciation);
- the opportunity cost of the investor in having capital tied up in infrastructure assets; and
- any other relevant taxes or imposts on the operator.

The Tribunal's terms of reference explicitly require it to develop a pricing framework that incorporates full cost recovery principles. Less-than-full cost recovery would see taxpayers subsidising activity at Perisher.

Ensuring the full costs of service provision are reflected in the prices charged for infrastructure and municipal services is important to ensure the State's resources are allocated efficiently. This is particularly so in the current context where significant resources are required to upgrade and expand the infrastructure at Perisher. From the community's point of view, making this investment only makes sense if the benefits derived from the resort area (in terms of the benefits of recreational use and profits to commercial operators) are sufficiently large that users are prepared to cover the full cost of the investment. Incorporating the full costs of municipal and infrastructure services into prices will test this willingness to pay.

Given the IPART terms of reference requiring establishment of a full cost recovery framework, arguments that might justify less-than-full cost recovery on the grounds of external long term benefits have not been considered.

## **Limiting cross subsidies across customer groups**

The pricing framework should also seek to allocate the burden of cost recovery in a manner that reflects each customer's impact on costs (that is, limiting cross subsidies). This would have benefits in terms of (one definition of) equity, that is, customers are paying charges in proportion to their usage or contribution to the cost of the system.

Cross subsidies sometimes persist to protect lower income earners by limiting the cost of essential services – another definition of equity. It seems unlikely that such considerations should be a factor in the Tribunal's decision on pricing at Perisher. While, in general, water and sewerage services etc could be considered essential services, at Perisher, their demand is derived from customers' presence at the resort. Customers can readily avoid the need for these services by not going to the resort. There would seem to be little basis for providing subsidised municipal services to any group of customers at Perisher.

## Providing signals for efficient levels of consumption

Each litre of water that is consumed at Perisher generates costs – treatment and distribution costs, disposal costs and, potentially, environmental costs. The current fixed charge arrangements provide no direct signal to customers about the cost of consuming municipal services, creating a risk of over-consumption.

The pricing framework should provide signals for efficient levels of consumption. To the extent possible, prices should reflect the marginal costs of consumption so that customers will only demand services if the benefits that they derive exceed the cost of providing the service to them. A price that is below marginal costs may encourage too much consumption (as in the current situation where the marginal price is zero) while a price above marginal cost may unnecessarily restrict consumption.

An efficient price structure will help improve resource allocation at Perisher. In practical terms, the benefits of improved resource allocation are likely to be seen through:

- lower operating and maintenance costs;
- reductions in any environmental costs; and
- avoiding or deferring capital works such as expansions in storage capacity, treatment capacity etc.

The extent of these benefits will depend on the responsiveness of demand to a move to volumetric pricing.

## Minimising the costs of administration and ensuring transparency

An aim of the pricing framework is to improve resource allocation. A pricing framework that is costly to administer for both NPWS and customers could offset the gains achieved from improving resource allocation. An advantage of the current arrangement is that is relatively straightforward in terms of application – that is, a single charge based upon a simple cost allocation model. A more appropriate pricing framework is likely to involve increases in administration costs (for example, reading and processing meter readings, installation of new cost recovery systems etc) . The challenge for the Tribunal is to strike a balance between improving pricing at Perisher and creating additional administration costs.

Avoiding complexity in the pricing framework will also be important. Customers should be able to understand how their charges are calculated and how they can manage their demand to minimise their bills. Limiting the number of different prices and charges that apply and avoiding complex pricing structures will help improve the transparency of the pricing framework. The services that are being provided should be clearly identified.

## Managing volume-related risks

There are two main volume-related risks to revenue collection. As discussed above, one is created through a mismatch between the structure of charges and the underlying (variable) cost structure. This can be mitigated through appropriately structured usage-based charges.

The other risk relates to the recovery of fixed costs of service provision. Ultimately, the revenue generated to cover these fixed costs is dependent on the number of visitors to the resort. These visitor numbers typically vary with the snow conditions at Perisher – good snow years attract more visitors. The structure of charges to recover these fixed charges affects the distribution of risk associated with fluctuations in visitor numbers. A fixed charge on leaseholders will provide greater certainty for the infrastructure provider that they will recover their fixed costs in revenue. However, it means that leaseholders, primarily commercial operators, would bear the profit risk due to a fixed overhead charge and lower revenue from visitors.<sup>10</sup> Conversely, a charge that varies with the number of visitors would mitigate the risk for commercial lease operators but increase the variability in revenues for the infrastructure provider.

The charging structure will need to balance these risks and/or ensure that parties are appropriately compensated for bearing risk.

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<sup>10</sup> It is worth noting that these operators also benefit from higher profits in good years when higher revenues are earned but there is no variation in the fixed charge.

**Draft pricing principles**

The pricing framework should seek to:

- recover the full cost of providing municipal services at Perisher
- limit the extent of cross-subsidies across different customer groups
- provide incentives for efficient consumption
- ensure that the pricing regime is simple to administer and is transparent to customers and other stakeholders
- appropriately distribute volume-related risk to revenue across users, bed and other service operators and the infrastructure provider.

The services being provided in exchange for the relevant price or charge should be clearly identified.

# 4

## *Understanding the nature of costs to be recovered*

ESTABLISHING A SET OF pricing principles requires knowledge of the underlying costs that are to be recovered through prices and charges

### **What are the key cost drivers?**

The total cost incurred by NPWS in providing municipal services at Perisher are generated through the provision of six broad services:

- water;
- sewerage;
- solid waste disposal;
- administration;
- amenities; and
- roads.

Table 4.1 provides a preliminary assessment of the key factors affecting the level of capital and operating costs for these services. This information will need to be confirmed following the completion of the total cost review.

Water, sewerage and solid waste disposal are services for which the level of service utilisation has an impact on the level of operating costs incurred. How intensively these services are used will in turn depend heavily on the visitor numbers through the year. Capital costs for these services depend upon peak demand for these services. That is, the sizing of infrastructure will depend heavily on the demand during the busiest days during winter. For these services, the capital costs are heavily dependent on visitor numbers during the winter.

For the other services, administration, amenities and roads, while level of service provision would be influenced by the size of the resort and expected visitor numbers, the ongoing operating and maintenance costs

would seem to be largely fixed/overhead nature and less dependent on visitor numbers.

#### 4.1 Characteristics of key cost drivers

	<i>Operating costs</i>	<i>Capital costs</i>
Water	Fixed (overhead) and variable costs. Variable costs vary with volume of water treated and delivered.	Capital costs associated with storage and reticulation and treatment assets, DIPNR Water Licensing and STP licence conditions. Storage assets sized to meet total demand. Reticulation and treatment assets sized to meet peak demand.
Sewerage	Fixed (overhead) and variable costs. Variable costs vary with volume of wastewater treated and pollutant load.	Capital costs associated with reticulation and treatment assets. Assets sized to meet peak demand.
Solid waste	Fixed (overhead) and variable costs. Variable costs vary with volume of waste disposed.	Capital costs associated with collection and transportation assets. Cost of landfill development and rehabilitation.
Amenities	Largely fixed/overhead costs.	Capital costs include assets used for parking control, litter collection, street furniture and paving etc.
Administration	Largely fixed/overheads relating to management of municipal services.	Capital costs associated with workshop for municipal services and other support infrastructure.
Internal roads	Largely fixed relating to maintenance of roads. Some variable costs associated with snow-clearing. Road assets predominantly service on-field stayers.	Capital costs associated with road and bridge assets.

## Should existing infrastructure costs be recouped?

The majority of capital works at Perisher have been provided and funded by the NSW Government. Aside from some recent one-off levies, charges on users have not explicitly sought to recover the cost of these capital works from users. Some of this infrastructure service capacity has already been 'consumed' as the assets have aged (and approached the end of their useful life). The issue for the Tribunal is whether future prices for municipal services at the resort should recover the capital costs associated with the current remaining value of existing municipal infrastructure at the resort.

Since the assets are sunk, whether or not an allowance for their costs is included in prices should not have implications for investment incentives (as long as future capital expenditure is recognised in prices). Also, the incentive for NPWS (or other operator) to maintain these existing assets should not be affected by the Tribunal's decision on the inclusion of existing asset costs in prices. The cost of renewing and maintaining these assets is a separate cost item that should be recovered through periodic charges on users at the resort. As long as prices include an allowance for

renewals and maintenance costs then NPWS retains the incentive to maintain the assets if they are contributing to service delivery at the resort.

The inclusion of the remaining value of existing asset costs in current charges may have implications for how the assets are used. That is, the resulting higher municipal charges due to their inclusion may affect the cost of skiing at the Perisher Resort and affect its competitive position relative to other ski-fields. The impact on prices could be mitigated via a phased recovery of existing asset costs or through an arbitrary reduction in the asset value to be recouped through prices.

Whether existing assets are included in the price largely comes down to an equity/distributional issue. Including the assets would mean that users of the Perisher resort are contributing to the cost of assets provided at the resort. Excluding these costs means taxpayers will have borne these costs and that Perisher users have been subsidised.

One thing the Tribunal will need to be aware of is the extent to which there may be a view among Perisher-lessees that lease-related payments (the one-off payments and ongoing annual payments) represent a contribution toward the capital cost of municipal infrastructure at the resort. That is, that they have already contributed to the cost of existing assets. This viewpoint appears to be a common theme in submissions to this Inquiry. Such one-off payments have only partially funded capital works, with the majority of works funded by the NSW Government. NPWS and Treasury have communicated their view to CIE that ongoing annual lease payments represent a return to the park asset (rather than a combined park and infrastructure asset). If this position were not accepted then realistically, it would seem a difficult, if not impossible task for the Tribunal to adjudicate on what historical lease payments represent. It would also likely be impossible to attempt to allocate lease payments between the park asset and the infrastructure asset to determine what proportion of asset value had already been paid for by users, if it were accepted that the lease payment comprises a payment towards covering the cost of capital works.

In going forward there would seem to be strong imperative in making transparent what each charge represents. In particular, making a clear delineation that lease charges represent collection of a resource rent while the MSC represents the recovery of the costs associated with providing services at the resort.

In making a decision on existing assets, it is useful to partition existing costs into the three following groups.

- Pre-ISS assets – assets funded prior to the ISS and plans to expand resort accommodation.
- Backlog Sewerage Works since 1998 (approximately \$9.6 million) – these capital works were a component of the ISS but due to their urgency (in terms of meeting environmental standards) were funded by Treasury on the condition that Perisher users make a \$4.5 million contribution.
- Assets funded by repayable advances since around 2001 (approximately \$20.3) – from Treasury’s perspective, the requirement to repay advances represents a regime change with greater emphasis on cost-recovery from users. Whether this change in approach was communicated to users is unclear.

If the Tribunal were to decide to include all existing infrastructure costs (that is, Pre-ISS), it would need to identify an appropriate value of these assets, given their current economic life. This would need to be the subject of a valuation study that is separate from the current total cost consultancy. The Tribunal would need to weigh up the cost of undertaking such a study against the potential benefits to taxpayers from recouping the remaining value of existing assets through user charges.

A conservative approach would be to ‘draw a line in the sand’ at either 1998, 2001 or 2004 and disallow the recovery of the costs of assets installed prior to that year. This would mean that none of the remaining value of Pre-ISS asset costs would be recovered through current charges. This could be seen as appropriate given these assets were funded and installed as part of an operating regime where the government covered the capital works costs. Recovering these costs (or part of these costs) would seem to be poor regulatory practice involving ex-post changes to the ‘rules of the game’.

Drawing the line at 1998 would allow the recovery of the \$9.6 million provided by Treasury to fund sewerage upgrade. This expenditure would seem to be different in nature to both the repayable grants and the Pre-ISS expenditure. As part of the conditions of providing the funding, users were required to contribute \$4.5 million toward these assets. Given this conditionality, it is now questionable that users should now be required to fund the remaining proportion.

In regard to the 1998 assets, approximately \$1.2 million of the \$4.5 million to be recovered from customers is outstanding. This corresponds to the proportion of these costs allocated to new beds. It would seem appropriate for this amount to be recovered through charges on the development rights for the new beds at the resort area.

Given the switch of funding arrangements to repayable advances, there would seem to be a clear case for drawing the line in the sand at least at 2001. The ISS recognises the need for the resort area to be self funding:

In the past, major works have been funded from Treasury grants where requirements exceeded available revenues from Perisher Range resorts. Treasury grants are not deemed to be a source of revenue in the future and the strategy considers the entity of Perisher Range as an on-going resort in its own right.<sup>11</sup>

The final complicating factor concerns the presence of backlog works that ought to have been executed in the past but have been carried forward to today. There are \$34 million in identified backlog works, part of which has been funded by the \$20.3 million in repayable advances. Given this, a case could be made for excluding the cost associated with backlog works that have been carried forward to today, and hence are represented in the post 2001 asset costs.

However, an alternative viewpoint is to say that irrespective of when the expenditure takes place, the beneficiaries of that infrastructure should be responsible for meeting the cost. By drawing a line in the sand at 2001, capital expenditure prior to 2001 has effectively been written off (and paid for by the NSW taxpayer). As the backlog works ultimately benefit visitors to Perisher, those visitors to the resort should pay for those works under the beneficiary pays principle. (Note that the issue of backlog works would be removed if cost recovery were sought for all pre-ISS assets.)

CIE considers that the latter viewpoint is more consistent with an efficient pricing regime. Furthermore, the latter position also better meets the requirement that the Tribunal develops a pricing framework that incorporates full cost recovery pricing principles. Less-than-full cost recovery, as would be entailed by excluding the backlog works, would see taxpayers continuing to subsidise activity at Perisher.

#### **Draft Pricing Principles**

Prices should be set to recover the value of infrastructure expenditure that has occurred since 2001.

The outstanding user-contribution of \$1.2 million for the sewerage upgrade works should be recovered from developer contributions associated with the expansion of the resort.

<sup>11</sup> NPWS, *Perisher Range Resorts Infrastructure Service Strategy – Strategy Report*, p. 27.

# 5

## *Developing a pricing framework*

THE TOTAL COST REVIEW WILL IDENTIFY an appropriate level of cost for the proposed Infrastructure Service Strategy at Perisher. These costs will generate an annual revenue requirement that will need to be recovered through periodic prices. This revenue requirement will need to cover:

- the variable costs of operating the infrastructure; and
- the fixed costs associated with the capital costs and overheads.

In addition to the ongoing revenue requirements, the pricing framework will also need to recover from developers the capital costs arising from the infrastructure necessary to service their developments.

Aside from new-development related costs, the current charging regime aggregates these costs into a single charge, which, as discussed earlier, suffers a number of disadvantages.

A price structure that better meets the objectives of pricing discussed in chapter 3 could be achieved if a more disaggregated pricing structure were developed that better reflected the nature of the underlying costs. This chapter considers how this pricing structure might be developed.

### **Recovering variable costs**

The current disconnect between consumption decisions over municipal services and the cost of that decision leads to:

- a risk that too much of the municipal service will be demanded/ consumed; and
- charges not being cost reflective across customers of varying levels of usage.

As discussed in the previous chapter, water, sewerage and solid waste disposal are the services for which the cost of provision varies most significantly with usage.

## Water

The Tribunal's pricing principles for local water authorities indicated a preference for a simple two-part pricing structure with the usage component based on the marginal cost of provision.<sup>12</sup> The Tribunal also recognised that an inclining block structure might be appropriate as a transitional measure to reduce the impact of a move away from property value-based charges which include a pre-paid water allowance.

Sending signals to conserve water through a usage/volume-based charge has three major benefits:

- reductions in operating costs associated with the treatment and transportation of raw water for consumption;
- less water extracted from the environment, leading to potential benefits to the environment from increased water flows; and
- potential deferral or avoidance of capital works associated with augmenting the storage capacity used to supply the resort.

The magnitude of these benefits will depend on how responsive customers' (in this case, the lessees) consumption is to changes in price. Empirical evidence on the price elasticity of demand for water indicates a range of between -0.7 and zero is likely. For Sydney, the Tribunal has favoured an elasticity of -0.13 based upon studies for Sydney.<sup>13</sup> How relevant these elasticity estimates are for the Perisher Range – where consumption is largely for inside use with the majority of water consumed in winter by visitors rather than residents – is unknown.

It is important to note that even if there is a limited response to the change to volumetric pricing, there are important benefits in terms of reducing cross subsidies between groups. Under usage-based pricing, charges will reflect each customers' use of the service and so be more cost reflective.

The absence of appropriate metering is sometimes a barrier to introducing usage-based pricing. However, this is not the case in Perisher. NPWS has reported that all premises have water meters and that these meters are being read regularly. NPWS is taking readings twice a year as part of their environmental management plan development.

<sup>12</sup> Independent Pricing and Regulatory Tribunal, *Pricing Principles for Local Water Authorities*, Final Report, September 1996.

<sup>13</sup> IPART, *Investigation into Price Structures to Reduce the Demand for Water in the Sydney Basin*, Final Report, p. 13, 30 July 2004.

If usage-based prices were adopted, how should the usage-based component be structured? Should it be a single-rate structure (the same marginal price for all units consumed) or an inclining block structure (a higher marginal price above some predetermined threshold)? There is also the issue of how should the marginal costs of provision be determined.

#### *Single-rate versus inclining block structure*

The Tribunal has indicated its past preference for a single rate structure on the basis that these are more consistent with demand management objectives than an inclining block structure, especially if the initial block priced is below the marginal cost. However, in its most recent paper on the appropriate price structure for Sydney, the Tribunal favoured an inclining block structure to help address the current supply imbalance. The principal disadvantage of an inclining block structure is that not all users will face the same marginal price weakening their incentives to conserve water. All water use contributes to the total amount of water drawn from the water source and treated, regardless of whether the user is a big or a small consumer. An inclining block tariff therefore offers lower incentives for conservation by reducing the marginal price to lower volume consumers, who, while they have lower levels of consumption, might none-the-less have discretionary consumption that could be reduced in order to lower the cost of their water consumption.

An inclining block tariff structure would mean that higher consuming customers would be contributing a share of revenue that is disproportionately higher than their share of water consumed. Put another way, higher consumption customers would pay a higher average per unit price for water than lower volume customers. There is not a clear basis for justifying this differential. This issue has important implications in the context of Perisher with its mix of commercial and non-commercial customers and the diversity of customer size within these groups. While some attempt to apply different thresholds for different groups could be made, it could lead to a complex and arbitrary set of water charges, especially if too many thresholds are set for different types of customers.

In some jurisdictions, water authorities have set inclining blocks tariffs to target more discretionary 'outside' use. That is, the initial block corresponds to a level of usage that might be considered reasonable for basic 'inside' uses such as showers, toilets, washing etc. This is often justified on equity grounds – charging a lower price for necessary uses of water for which there may not be much ability to reduce consumption in response to a higher price. The higher second block targets discretionary outside use, for example, watering gardens, washing cars, topping up swimming pools,

and hosing paths and other outdoor surfaces. For such water uses of water, there may be greater capacity for customers to react to the price signals and cut consumption. This type of structure is often seeking to benefit lower income households by limiting the cost to them of an essential service.

In the context of Perisher these arguments for an inclining block tariff are unlikely to apply. Given the location and the nature of customers' premises, the vast majority of water use is likely to be for inside use and so there is little basis for arguing for a higher block to target more discretionary outside use. Further, it is questionable whether much of an argument could be mounted that there is a need for a low-price initial block to protect low-income customers in a resort area that supports a highly discretionary leisure activity.

There would seem to be little basis for arguing that an inclining block tariff should be favoured over a single rate structure.

#### *Determining marginal costs of provision*

If the Tribunal were to decide on a single-rate usage charge, at what rate should this usage charge be set? That is, how should the marginal cost of provision be determined? At a minimum, the usage charge should be set at or above Short Run Marginal Cost (SRMC). SRMC represents the additional costs incurred by the water authority as a result of an additional litre of water being consumed – for example, costs of treatment, pumping etc. In practical applications, SRMC is often approximated by the average variable cost of service provision.

An issue for the Tribunal is whether there are benefits from going beyond SRMC and basing the usage price on Long Run Marginal Cost (LRMC). That is, signalling the cost of capacity expansion in the usage price. An element of the ISS is an expansion in the storage headworks that supplies the resort, suggesting there are likely to be benefits from sending signals to customers about the cost of their consumption in terms of expanding capacity. This seems like an appropriate set of circumstances for pricing at LRMC.

Setting the usage charge at LRMC means that customers will receive a signal about the impact of consumption on both short-run costs such as treatment and distribution costs, and also on the timing on new capacity augmentations.

To the extent that it is growth in peak consumption in the winter that is driving capital expenditure on capacity, one option would be to pursue

seasonal pricing with a usage-price set at LRMC in the winter, with a lower non-ski season rate. Under seasonal pricing, the non-peak period price should be set at least to recover SRMC. In the case of the storage works, it is likely that total water consumption rather than peak consumption that influences the timing on capital expenditure, suggesting that LRMC pricing would be appropriately applied throughout the year. The seasonal pricing option is likely to involve greater administrative burden (and hence cost). For example, differing volumetric charges will need to be applied at differing times of the year, and for differing components of the water infrastructure (transport capacity and storage). It is not immediately clear, however, that the benefits of moving to a seasonal pricing regime are sufficient to justify the associated administrative burden.

### *Sewerage*

The absence of meters measuring the volumes of wastewater discharged to sewer has traditionally posed a problem for water authorities seeking to introduce usage-based pricing for sewerage. Charging structures such as pedestal/fixtures based charges and discharge factors (based on metered water consumption) are measures that have been used to proxy direct usage-based charges.

Under a pedestal/fixture based charge, a customer's sewerage charge increases with the number of pedestals installed in a customer's premise. Given weak correlation between water use and the number of pedestals, this is likely to be a poor proxy for usage based pricing. The experience in other jurisdictions such as the ACT is that this type of charging structure tends to introduce inequities within and across customer groups. This approach provides an incentive to reduce the number of pedestals in a customer's premise, which may not affect the volume of wastewater discharged to sewer. The pedestal/fixture based approach is unlikely to offer strong incentives for conserving the amount of wastewater discharged to sewer. The principal advantage of the pedestal-based approach is its administrative simplicity.

The discharge factor approach offers stronger incentives for conservation. Under this approach, the sewerage charge is based upon some proportion of metered water consumption. This proportion – the discharge factor – is set to reflect the assumed discharge to sewer as a result of water use inside the premise. The remaining water is assumed to be for outside use and so does not enter the sewerage system. The extent to which this approach is cost reflective across customer groups will depend upon the

diversity of water use across customers (and how well the discharge factor reflects their water use patterns).

A discharge factor approach offers good prospects for being applied at the Perisher Resort. In particular, NPWS reports that most of the wastewater used at the resort is disposed of through the sewer as there is very little external watering of the surrounds at the resort.<sup>14</sup> This suggests that a discharge factor close to or equal to 1 would likely to be appropriate. If a discharge factor of 1 were applied then a single charge set to recover the total variable costs of water and sewerage could be set – although it might be desirable for these to be separated for transparency reasons.

To the extent that for the majority of customers discharge all (or nearly all) of their metered water consumption to sewer then a discharge factor of 1 would be reasonably cost reflective. Any customers that have significant outside use would be paying more than their use of the sewerage system would justify. To address this, the Tribunal could:

- set a lower uniform discharge factor for all customers; and/or
- apply a lower discharge factor to customers (or groups of customers) that have identifiably lower discharges to sewer.

Setting a discharge factor lower than 1 would reduce the extent of overpayment for customers with significant outside use compared with a discharge factor of 1. However, such a move would mean that customers with wholly inside use would be paying too little for their sewerage charges.

The alternative of setting a discharge factor for customers with identifiably lower discharges to sewer would improve the cost reflectiveness of the usage based charges for sewerage. The disadvantage of this approach is that administration costs are increased due to the level of tailoring discharge factors. The Tribunal could limit these costs by restricting the eligibility for lower discharge factors to some pre-determined volumetric threshold, with consumption above this threshold entitling customers to apply for a tailored discharge factor. There may also be readily identifiable groups of customers for which it would be obvious that a lower discharge factor might apply. As an alternative to the volumetric threshold, the Tribunal could limit the application of lower discharge factors to these customers.

The circumstances at Perisher probably do not justify setting a discharge factor at a value less than one. NPWS have confirmed that virtually all

<sup>14</sup> NPWS, *Perisher Resorts Infrastructure Services Strategy – Strategy Report*, p. 31.

water consumption is inside use and is disposed of through the sewer. Activities such as snow making, for example, do not draw on the municipal services infrastructure for their water supply. This suggests that there would unlikely be any customers that are materially over-charged under a sewerage pricing regime with a discharge factor of 1. NPWS's view will need to be confirmed with the total cost consultant.

To the extent that there are potential sewerage-related capital expenditure requirements that could be deferred through lower water consumption, then basing the sewerage surcharge on the LRMC rather than SRMC of sewerage supply should be considered.

### *Solid waste disposal*

The variable costs of solid waste disposal are largely related to the cost of haulage to disposal (landfill or recycling collection point) and the cost of disposal itself (such as paying for access to a landfill site). In principle, it would seem appropriate that the cost of solid waste disposal to customers should reflect these volume (or weight) related costs in some way. However, there may be some practical limits to whether such usage based prices can be introduced.

One issue is the potential incentive for people to dump waste in the national park to avoid usage based fees. Illegal dumping is a substitute for using the NPWS provided service. The degree to which customers view dumping as an alternative will depend upon the value they place on the environment and obeying laws, the inconvenience of physically dumping waste, the risk and penalty of getting caught. While it is likely that most people would not dump waste illegally, there may be some people that would illegally dump waste to avoid the usage based charge. This may pose an unacceptable risk to the natural environment in the National Park.

There are also practical issues about how such a charge might be collected. Current arrangements at Perisher Resorts involve NPWS providing bulk bins at a central repository with customers responsible for delivering their waste to that site. Usage-base pricing would require these arrangements to be altered with either NPWS regulating the deliveries of waste to the collection points or engaging a contractor that would record volumes of waste collected from each customer. An option would be to only accept waste in pre-paid rubbish bags – however, this would still require some form of monitoring by NPWS to ensure that only pre-paid bags are accepted. This system would also be susceptible to illegal dumping (either in the National Park or at the central repository).

The decision to introduce usage-based pricing for solid waste would need to balance the increased administration costs of administering a usage-based system, including protecting the environment from illegal dumping versus the benefits of providing a signal to reduce waste and improve the cost-reflectiveness of waste service charges.

Under current arrangements, there would seem to be limited scope for introducing usage-based charges without a significant alteration in the way waste collection services operate in the resort area. For example, usage-based charges for solid waste disposal might necessitate adoption of a 'cleared roads' policy. In the short term, it would seem appropriate that the cost of waste collection is recovered through a fixed charge on customers.

NPWS is currently considering how best to manage solid waste disposal in the resort area. This study could lead to a different solid waste disposal option that supports volumetric pricing. If this were the case, the Tribunal could introduce a usage-based price for solid waste disposal. In making this decision the Tribunal would need to be convinced that the incentive to dump waste created by the volumetric pricing did not pose too great a risk to the environment.

#### **Draft pricing principles**

The volume-related costs of providing water and wastewater services should be recovered by a usage-based water and sewerage charge.

The usage-based sewerage charge should be based upon the customer's metered consumption of water, with a discharge factor of 1.

The usage-based component of price should be a single rate (rather than an inclining block tariff) and reflect the LRMC of both water and sewerage supply.

Unless current collection arrangements change, the cost of solid waste disposal services should be recovered through a fixed charge.

## **Recovering fixed costs**

With volume-related water and sewerage costs recovered via a separate water and sewerage usage-based charge, there are a number of fixed costs that need to be recovered through customer charges.<sup>15</sup> These fixed costs include:

- the fixed costs of water and sewerage provision;

<sup>15</sup> These costs include the volume-related solid waste costs, which are considered to be more appropriately recovered via a fixed charge.

- the costs of providing solid waste disposal services; and
- the fixed costs associated with providing roads, amenities and administration services.

The fixed costs include overhead costs such as accommodation, utilities and executive staff, staff development etc, and also the capital related costs associated with capital expenditure to:

- service general levels of growth in demand;
- raise standards to minimum required levels; and
- maintain the current service capacity of the infrastructure.

The issue for the Tribunal is how these costs should be allocated across customers in a manner that is:

- consistent with economic efficiency;
- is equitable; and
- is administratively simple and transparent.

In determining the fixed charge the Tribunal needs to ensure that fixed charge raises sufficient revenue to cover the identified costs but is not set at a level for individual customers that causes them to discontinue consumption. The potential for inefficient bypass is probably limited at the resort given the nature of the services offered and the development approvals required. However, there is a risk setting the charge too high could cause lessees – such as ski clubs – to relocate to areas outside the National Park or to other resort areas.

In the context of infrastructure at Perisher, equity should probably be defined in terms of consumers that place greater demands on services paying a greater proportion of the fixed costs than lower demand consumers. This is closely related to the issue of day visitors and how best to ensure that these customers bear the costs that they arise. As discussed in chapter 3, considerations about income-equity are probably not relevant in the current context.

Administrative simplicity and transparency requires a straightforward cost allocation methodology that is easily replicatable and understood by stakeholders.

### *Allocating costs on the basis of the draw on capacity*

Setting fixed charges such that users that place a greater relative burden on infrastructure should bear a greater share of the costs requires an understanding of how different users impact on the various elements of the infrastructure at Perisher.

The next step in determining pricing principles is to gain a better understanding of how different user groups, and ultimately overnight and day visitors to Perisher, contribute to the demand for infrastructure. This will allow the development of a methodology for allocating the fixed costs across the various user groups.

The question is then how to best structure a price that recovers these costs from customers. Some options include:

- recovering costs from lease-holders alone on a per bed basis, with the day visitor related costs converted to a per bed equivalent basis based upon an engineering based conversion factor;
- recovering the cost generated by overnight stayers on a bed basis and levying a separate charge on day-visitors (for example, a ticket levy or a gate fee); or
- recovering all costs through a charge levied on all visitors to the resort.

Of importance to determining this methodology will be understanding how day visitors actually contribute to the demand for infrastructure at the resort. For example, is it through their interactions with the various retailers at the resort or is it solely through their use of ski-field facilities (for example, public facilities on the ski-field) etc. This information will help determine a methodology for recovering costs from day-visitors. For example, if interactions with retailers are important, then a charge based on retail space might be appropriate.

A requirement of the charging regime should be to make the regime as administratively simple and transparent as possible. Hence while fixed costs could be recovered via a charge levied on each entrant to the National Park, it may be less costly (from an administrative point of view) to levy a charge on retailers, who can then recover costs from their customers.

### *Separate water and sewerage charges*

If the Tribunal opts for a usage-based price structure for water and sewerage, there would be some benefit in separating the fixed costs associated with water and sewerage from the other fixed costs and

recovering them as a separate fixed charge. In this way, water and sewerage would have a separate charge along the line of the simple two-part tariff frequently adopted by water authorities in Australia and elsewhere.

Advantages of a separate water and sewerage charge include:

- making transparent the total cost of water and sewerage services at the resort;
- potentially facilitating the transfer of the operation of these services to another operator, for example, a private supplier, if need be;
- allowing these fixed costs to be transparently allocated to users on the basis of measures closely related to a users contribution to capacity, for example:
  - inlet water pipe diameter; and
  - historical winter water consumption.

### *Other municipal services provided by NPWS*

The fixed costs associated with the remaining services (administration, amenities, roads and solid waste disposal) would be recovered as a single municipal services charge. The issue then concerns what 'metric' the fixed charge(s) should be attached to/levied on, noting the desire for simplicity.

In theory it would be a relatively straightforward matter to identify the basis on which to recover the fixed costs associated with solid waste disposal, administration and amenities (it may be more difficult in practice due to logistical issues etc). However, identifying the appropriate metric onto which base the charge for road services may be more challenging. In the case of roads, what is needed is a measure that reflects the value to that premise of having access via cleared/paved roads.

In essence, access to cleared/paved roads represents access to a network, and all persons accessing that network can be expected to derive benefits (either directly or indirectly) from it. For example, better ability to move around the entire resort, knowledge that emergency vehicles will have unimpeded access to a site, and improved rubbish collection services and a resulting improvement in amenity. The road network and any resulting benefits will be of a 'public good' type (ignoring the issue of congestion).

Given the premise that all lessees (or their customers) at Perisher will in some way benefit from an upgrading of the road network, the issue then turns to how to apportion the costs of the road network. If the Tribunal

accepts that all lessees benefit equally from the road network, then the costs of that network could be apportioned according to the size of the lease.

If it is felt that some benefit more than others, then a measure such as the Valuer General's SLV may be the best readily available measure to apportion costs. A property's SLV reflects (in part) public amenities, frontage and access. Premises on 'inner roads' will likely have a higher SLV (closer amenities, better access etc) than premises on 'outer roads' and hence would likely bear a greater share of costs under the SLV approach. However, those premises on the outer roads will cost more to service, meaning that they should bear a greater share of the costs under the user pays approach.

Despite this potential area of cross subsidisation, an advantage of using the SLV is that it is readily available and is already used as an input to determining the annual rental payment to NPWS. However, an important disadvantage is that it is possible to challenge the SLV, hence possibly raising the administration burden.

#### **Draft pricing principles**

Fixed costs of water and sewerage services should be recovered via a service/access charge levied on the size of service connection. This fixed charge would comprise 1 component of the two part-pricing regime recommended for these services.

The cost of road services should be recovered via a fixed charge levied on the metric that best reflects the value of the road network to a premise. Lease size is probably the best readily available indicator on which to apportion costs.

Fixed costs of remaining services should be recovered via a fixed charge levied on the metric best approximating the draw on services occasioned by that customer, noting the need for a pricing regime that is simple to administer.

For reasons of transparency, separate fixed charges for each of the services should be identified where practical/feasible.

## **Recovering development-related costs**

The Tribunal's terms of reference require it to advocate pricing principles to recover the costs of the new village centre and other beds utilising a developer charges framework. Developer charges are levied by local councils and water service providers to recover the cost of providing infrastructure to service a new development. In the context of postage stamp pricing, developer charges provide better signals for resource allocation and usage, better reflect the environmental effects of urban

development and ensure the financial viability of urban water infrastructure.<sup>16</sup>

The Tribunal has developed a framework for developer charges for application by local water authorities, which would seem a reasonable basis for a developer charges framework at Perisher. This methodology was most recently reviewed in September 2000 as part of the Tribunal's determination on developer charges for Sydney Water, Hunter Water and Gosford and Wyong councils.

### *The Tribunal's methodology*

The Tribunal's methodology recognises that new development should meet the full efficient cost of infrastructure through either developer charges or periodic charges. The developer charge is a net present value approach as is calculated as the cost of assets used to service the development (K) less the future net operating revenues (or losses) expected to be derived from providing services to that development.

The first component of the formula, the capital charge (K) is intended to capture all existing and future assets that will service the new development. The capital charge includes:

- existing assets for which the agency can demonstrate a nexus between the development and the assets which serve the development – valued at Modern Engineering Equivalent Replacement Asset (MEERA)<sup>17</sup>
- assets which are constructed or to be constructed after the development
- an allowance for the holding cost of existing assets.

Under the Tribunal's methodology, asset built before 1970 are not included in calculation of the developer charge. Assets built before 1996 (when the Tribunal's methodology was introduced) also attract a lower holding cost than newer assets, reflecting the fact that these assets are sunk and the agency was not anticipating a 'commercial return' on the assets.<sup>18</sup>

The second component of the Tribunal's formula is a revenue offset. With postage stamp periodic charges these are likely to include a component

<sup>16</sup>PWC and CIE (1999), *Review of Developer Charges*, IPART Research Paper 16.

<sup>17</sup>This methodology was specified in the Tribunal's 2000 determination on developer charges for the water authorities regulated by it.

<sup>18</sup> IPART (2000), *Sydney Water Corporation, Hunter Water Corporation, Gosford City Council Wyong Shire Council: Developer Chargers from 1 October 2000*, p 19.

reflecting the capital cost of existing assets. This component will be equal to the difference between revenue and the ongoing operating and maintenance costs. The net present value of this component (that is, the difference between revenue and operating and maintenance costs) is deducted from the net present value of the capital charge to avoid customers in the new development paying twice for existing assets. That is, through both the capital charge and through periodic prices.

The aggregate amount to be collected from developer charges is expressed on an equivalent tenement or per hectare basis.

### *Applying the Tribunal's methodology to Perisher*

The Tribunal's developer charge methodology was determined in the context of metropolitan water businesses where cost-recovery, including the cost of capital works, is more firmly grounded. How applicable would it be to Perisher, where capital costs have largely been funded by the state and its taxpayers?

The key factors in the Tribunal's methodology are new asset costs, existing assets, the revenue offset and the conversion to a per lot basis.

#### *New asset costs*

The Tribunal's methodology allows for the cost of assets directly attributable to the new development (that is, a demonstrated nexus) to be included in developer charges. These costs should represent the least cost options for servicing the development. The total cost consultant will need to provide advice to the Tribunal on:

- what costs are directly attributable to the new Perisher development
- whether the costs identified in the Strategy represent the least cost solution.

On the first point, it will be critical that the total cost consultant identify the incremental costs required to service the new developments alone. In particular, infrastructure costs to service the general growth in total day-visitor numbers should be excluded. These costs are more appropriately recovered through the on-going periodic charges that are levied across all users since this growth cannot be reasonably related to the expansion in the bed numbers (which allow the expansion of over-night stayers). Alternatively, the additional infrastructure costs could be recovered through a developer charge on any rights granted to expand the ski-resort facilities that facilitates stronger growth in visitor numbers.

The Strategy currently contains a capital works program for expanding the headworks assets for the supply of water – expanding the storage capacity to meet the additional demand created from the resort expansion. Under the Tribunal’s methodology, these headworks costs would be included in the developer charge calculation. The Tribunal included these headworks costs to signal the different costs of development in different catchment/supply areas. In the present context, this signalling role is less important.

Discussions with NPWS suggest that there is some doubt about whether these headworks (and any other related capital works) would be required if a move to usage-based pricing and other demand management measures can reduce water consumption at the site. In this situation, there is a question about whether it would be appropriate to include these headworks costs in the developer charge.

If the headworks costs were included in the developer charge and the capital works were not subsequently undertaken, then the new customers would have unnecessarily contributed toward costs that were not incurred.

If the total cost review identifies that there is some uncertainty around these headworks (and any related assets) then it would be more appropriate for these costs to be recovered through periodic charges on all users, when and if they occur.

#### *Existing assets*

The Tribunal’s methodology provides for the recovery of the costs of existing assets that are used to service the new development (for which there is a demonstrated nexus between the asset and the development).

If the Tribunal were to decide not to recover the cost of existing assets installed before 2001 in periodic charges (see above), then it would not be appropriate to recover existing asset costs from developers through the developer charge. To do so would see existing and new lessees treated differently. That is, existing lessees would not be subject to charges for assets installed pre 2001, whereas new developers would be required to meet the cost of existing assets (pre 2001) used to service the new development. Furthermore, if new beds are offered as extensions to existing premises, then including existing assets in the developer charge would be internally inconsistent with the principle of not recovering existing costs from existing customers.

As discussed earlier, the outstanding contribution from lessees that was assigned to new beds should be included in the developer charge. This amount totals approximately \$1.2 million.

#### *Revenue offset*

The inclusion of the revenue offset is to avoid double dipping – that is, recovering the cost of existing assets twice, once in the developer charge and a second time through the periodic charge. In determining what the revenue offset should be, the guiding principle should be that the set of charges would not recover more revenue in net present value terms from users than what the value of infrastructure costs justifies. The revenue offset should be set to ensure that this principle holds.

#### *Converting to a per unit measure*

Under the Tribunal’s methodology, the developer charge is converted to a per unit charge by taking the total amount to be recovered and dividing this by the number of tenements or area to be serviced by the infrastructure. In Perisher’s case, development plans involve expansion in the number beds on offer at the resort, rather than opening up lots for development as in a typical development area. This means the number of beds would be an appropriate unit of measure.

Where developments are to be accompanied by additional retail or other space, a simple bed measure could potentially understate the impact of the development on infrastructure costs. In this case, it will be necessary to account for the additional retail or other space through a bed-equivalent measure based upon an engineering assessment of what that additional space contributes to the demands for new infrastructure.

If it is the case that the new village centre development is the only development that will be accompanied by additional retail or other space, then a more transparent mechanism would be to partition the development-related costs into:

- costs associated with the village centre development; and
- costs associated with the other additional beds.

The first set of costs would simply recovered from the developer of the new village centre while the latter would be converted to a per bed basis.

### *Should the Tribunal apply developer charges at Perisher?*

In the context of the Perisher resort and the very tightly controlled development processes, the principal objective of developer charges would be recouping the cost of providing infrastructure rather than providing signals about where within the resort development should occur.

An alternative to levying a developer charge at Perisher is to levy higher periodic charges on the new development that recoup the cost of infrastructure over time, rather than as an up-front payment. This approach would mean that differential charges would apply across customers depending on whether they are new or old developments.

However, the nature of the proposed expansion prohibits such an approach applying in Perisher. Aside from the new village centre development, the remaining additional beds are expected to be allocated to existing lessees, allowing the expansion of existing lodges and hotels. This prevents a ring-fencing of the new development for which higher charges might apply.

Signalling the costs of new development therefore requires application of developer charges. The alternative is for these new development-related costs to be recovered through periodic charges. This would lead to a situation where lessees that have not expanded their accommodation or have relatively small expansions in bed numbers cross subsidising those with larger expansion in bed numbers. This is inconsistent with the notion of cost-reflective pricing.

#### **Draft pricing principles**

The cost of providing and expanding infrastructure to meet the demands of the new development at Perisher should be signalled through developer charges on the developers of new facilities at Perisher.

The cost of providing headworks should be excluded from the developer charge if there is uncertainty about whether such works will be required over the period covered by the Strategy.

### *Should relocation costs be recouped from developers?*

As part of the development of the new village centre and to improve the appearance of the Centre Valley, the existing municipal service staff office accommodation and workshops are to be demolished and those facilities relocated to new premises. Under a full cost recovery approach, the cost of this relocation should be recovered from the users of the Perisher Resort. The issue for the Tribunal is whether these costs should be included as part

of the development costs and recovered through developer charges levied on developers of the new village centre or whether these should be borne by the wider Perisher user base and recovered through periodic charges for municipal services.

In considering whether these relocation costs should be recovered from developers of the new village centre or from the wider customer base, it is useful to ask the question, what would have happened in the absence of the new development occurring? In this way, the incremental cost of the new development can be identified and recovered through developer charges. This is consistent with the Tribunal's developer charges framework that requires demonstration of a nexus between the development and the assets/expenditures incurred.

NPWS has indicated to CIE that the existing facility is at or near the end of its useful life and that renewal would have occurred anyway, in the absence of the new development occurring.<sup>19</sup> This is something that would need to be verified by the total cost review consultant. However, if it were the case that redevelopment of the workshop facilities would have occurred in the absence of the new village centre development, then these incremental costs would be less than the total cost of relocating the workshop facility. That is, the additional costs arising from the new development are restricted to the difference between:

- the cost of redeveloping the workshop facilities with the new village centre to go ahead, as per the Strategy
- the hypothetical cost of redeveloping the workshop facilities in the absence of the new village centre development (the counterfactual).

This approach effectively apportions the cost of relocating the workshop facilities between all customers of the resort (equivalent to what costs would have been borne in the absence of the new village centre development) and the developers of the new village centre (who bear any increase in workshop relocation costs as a result of the development of the new village centre). This methodology would apply to a situation where the development has brought forward the redevelopment of the workshop facilities. In this situation, the incremental costs would be equivalent to the change in the net present value of the relocation costs due to the change in timing.

The Tribunal might wish to apply a materiality test to this allocation of costs. That is, if the incremental cost is relatively small, then it may be more

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<sup>19</sup> A Henchman, NPWS, Personal Communication, 1 September 2004.

transparent and less complex to allocate the workshop relocation costs for recovery through periodic charges on all users.

#### **Draft pricing principles**

Subject to a materiality test, only the incremental cost associated with the development of the village centre should be included in developer charges levied on the development of the new village centre.

## **Improved pricing versus administrative simplicity**

It would be possible to implement a pricing regime for municipal services at Perisher that satisfies the majority of pricing objectives outlined in chapter 3. That is, a pricing regime could be implemented that:

- recovers the full cost of providing *each of* the municipal services
- limits cross-subsidies within and across customer groups
- provides incentives for efficient consumption
- appropriate distributes volume-related risks across users and the infrastructure provider.

However, in totality, the resulting pricing regime would likely be complex. Prices would need to be established for each of the 6 categories of municipal services, with some prices comprising a fixed and variable charge component (that is, a two-part pricing regime). Furthermore, given that a diverse range of factors would drive costs, charges would likewise need to be levied on a diverse range of units/metrics. For example, the following charging regimes could be envisaged for the various municipal services provided by NPWS.

- Water – two part pricing regime with volumetric charging on quantity of water consumed with fixed costs apportioned across connection size.
- Sewerage – volumetric pricing on volume of wastewater discharged to sewer (once discharge factor known), with Trade Waste Agreements used to control pollutant load (or ‘quality’) of wastewater.
- Solid waste disposal – if ‘cleared roads’ approach adopted, volumetric charging on volume/weight of waste with fixed costs apportioned across number of bins etc; alternatively, apportion costs across visitors or establishment types (hotels, ski clubs, restaurants, retail etc) and using a measure such as FECA, with costs being recouped as a fixed charge.

- Amenities – fixed charge levied on each visitor (medical, litter collection etc) and vehicle (parking control).
- Administration – fixed charge levied on each visitor.
- Roads – costs distributed across premises using SLV (or other metric) as the apportioning factor.

On top of this there is the issue of setting variable costs at either SRMC or LRMC.

Hence in practice, it is possible to see meeting the pricing objectives identified in chapter 3 resulting in a multitude of differing charges. Indeed, implementing such a pricing regime may see the cost of implementation exceeding the resulting efficiency gains.

Given the complexity, logistical, administrative burden and transaction costs that such a pricing regime would likely impart, and noting the absolute cost of the services delivered by NPWS at Perisher, it may be questionable as to whether a sophisticated pricing regime is warranted for each of the services. Table 5.1 shows the cost associated with NPWS's delivery of the various municipal services as put forward in the ISS.<sup>20</sup>

A more pragmatic approach may be to price some services – those where it is relatively 'easy' to do so – according to the principles outlined in chapter 3, while the cost of the other municipal services is recouped in a more straightforward manner, such as a fixed and bundled surcharge (or resort 'access' charge) on lift tickets. Hence in practice it may be necessary to trade off the 'preferred' cost reflective pricing regime against lower transaction costs, administrative simplicity, and the costs associated with implementing the preferred regime.

This approach might see, for example, volumetric pricing (as part of a two part pricing regime) being applied to the services of water and sewerage; while a more simplistic lift ticket surcharge is used to recover the costs of administration, amenities and solid waste disposal (assuming volumetric pricing is not possible). Road costs could be recovered from primary lessees using a measure such as size of lease area or SLV to apportion costs.

Under this example \$59 million (or 35 per cent) of the ISS's total cost of \$168 million would be recovered on a full cost recovery from users. If volumetric pricing proves to be possible for solid waste disposal, then \$79

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<sup>20</sup> The Tribunal is to assess the capital works program put forward by NPWS. Depending on the Tribunal's findings, the costs identified in table 5.1 may need to be revised.

5.1 Cost of infrastructure provision by NPWS over next 30 years<sup>a</sup>

<i>Municipal service</i>	<i>Capital works</i>	<i>Recurrent works</i>	<i>Total works</i>	<i>Share of total costs</i>
	\$'000	\$'000	\$'000	Per cent
Water	20 911	7 308	28 219	17
Sewerage	15 525	15 212	30 738	18
Solid waste disposal	10 938	8 830	19 767	12
Amenities	4 147	12 425	16 572	10
Administration	16 664	25 637	42 301	25
Roads	23 319	6 865	30 184	18
<b>Total</b>	<b>91 505</b>	<b>76 277</b>	<b>167 782</b>	<b>100</b>

<sup>a</sup> Costs, expressed in 2000-01 dollars with no allowance for inflation, include re-current operating and life cycle capital costs.

Source: A. Henchman, NPWS, personal communication, 22 September 2004.

million (47 per cent) of total ISS cost could be recovered on a full cost recovery from users.

Adopting a more simplistic approach for recouping the costs associated with the municipal services of solid waste disposal, amenities and administration will, however, not be without its problems. For example, if a surcharge for these other services is levied on lift tickets, then some visitors to Perisher will not be making a contribution to meeting the cost of these services as it is estimated that around 85 per cent of visitors to Perisher purchase a lift ticket. As all visitors to Perisher contribute in some way to the draw on infrastructure and hence have a cost impost, applying a surcharge to lift tickets will see those visitors who buy a lift ticket cross subsidising those who do not buy a ticket. The lift ticket approach would however go some way to addressing concerns expressed in (a large number of) submissions to this Inquiry that day trippers were not making a contribution to the cost of municipal services. Box 5.2 provides a stylised example of the degree of cross subsidisation that the lift ticket approach to cost recovery might entail.

Some stakeholders may consider that a lift ticket surcharge would make Perisher less competitive relative to other ski resorts such as Thredbo and the Victorian resorts. However, the competitive position of Perisher is going to be influenced by the extent of cost recovery, and the importance of non-price aspects such as the skiing quality/experience at Perisher vis-à-vis other resorts. Whether cost recovery is achieved through a surcharge on lift tickets or (for example) via a surcharge on park entry should make little difference to Perisher's competitiveness, as the net effect on the cost of skiing at Perisher should be identical.

To believe otherwise would require that demand for skiing at Perisher to be more responsive to rising lift ticket prices than the equivalent (absolute)

rise in the overall cost of the visit to Perisher. Whether this assumption holds in practice would need to be verified.

## 5.2 Degree of cross subsidisation associated with a simplistic pricing regime

Assume that the costs associated with delivering the services of solid waste disposal, amenities and administration are to be recouped by a fixed charge levied on lift tickets (hence borne by down hill skiers). The ISS identifies the total cost of these services (until year 2029/30) being \$78.6 million. Due to, in large part, variation in capital works, costs on a year-by-year basis vary significantly, ranging between \$1.5 million (2008/09) and \$13.2 million (2004/05). On average, NPWS estimates the services to cost \$2.7 million per year.

The number of 'skier days' is estimated to increase by 1 per cent annually. By 2029/30 it is estimated that around 850 000 skier days will be spent at Perisher. The average number of skier days over the period 2001/02 to 2029/30 (the same period pertaining to the ISS) is calculated to be 739 000. If we assume that 85 per cent of visitors to Perisher partake in skiing, then the average annual number of 'visitor days' to Perisher is calculated to be 869 000.

If the (average) annual cost of the solid waste disposal, amenities and administration services is recouped via a fixed charge levied on lift tickets, then a daily lift ticket will be subjected to a \$3.67 surcharge (given by \$2.7 million divided by 739 000 skier days). In this simplified example 'averages' have been used so as to smooth out the surcharge (hence stopping year-to-year variation in the surcharge).

However, as all visitors — skiers and non-skiers — to Perisher contribute in some way to the draw on infrastructure and hence have a cost impost, a full cost recovery approach on a user pays basis would see the annual service cost of \$2.7 million being borne by *all visitors* to Perisher. This would equate to a per person surcharge of \$3.12 per day spent in the resort (given by \$2.7 million divided by 869 000 visitor days).

Levying a surcharge on lift tickets to cover the costs of solid waste disposal, amenities and administration services sees downhill skiers cross subsidising non skiing visitors to Perisher by an average annual amount of \$407 000, or \$0.55 per lift ticket day on average. If 10 per cent of visitors to perisher do not purchase lift tickets, then the cross subsidy is \$0.37 per lift ticket day; and \$0.73 per lift ticket day if 20 per cent of visitors do not buy a lift ticket. Cross subsidies between other sub groups of skiers, such as overnight stayers and day trippers, may also exist.

Note that In their submission to this Inquiry, Perisher Blue Pty Limited suggest that 'the demand for lift tickets is price sensitive, with visitors having the option of undertaking numerous activities (walking, tobogganing etc) that do not require the purchase of a lift ticket.

If demand for lift tickets proves to be elastic, then it may be more appropriate to levy the charge on a per person basis (that is, on entry to the National Park). This approach would also remove the cross subsidy between downhill skiers and other visitors to Perisher. However, a resort entry charge would also likely necessitate (for consistency across National Parks) a restructuring on entry charges to all parks/reserves managed by NPWS. Currently, entry charges for NPWS managed National Parks are levied on a per car basis, and not on a per person/entrant basis. A further difficulty lies in a need to identify, or arrange some form of rebate system, for visitors passing through Perisher on the way to Charlotte Pass (not part of this review).

**Draft pricing principles**

Moving to a user based full cost recovery pricing regime for each of the municipal services is likely to result in a complex pricing regime with a large administrative burden and high transaction costs.

Given this, trading off the preferred cost reflective pricing regime against a regime that has a smaller administrative burden and lower transaction costs should be considered.

A usage based(two part) pricing regime is likely to be best suited to cost recovery for water and sewerage services, while recovering the costs associated with solid waste disposal, amenities, administration and roads is better suited to more simplified pricing regimes.

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