

FIVE MYTHS OF PARKING POLICY

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ABSTRACT: This paper discusses five commonly held myths concerning parking policies in central cities in Australia.

- parking policies and objectives are articulated in a meaningful way;*
- central city councils have substantial control over the stock of parking spaces;*
- parking costs are high in central cities;*
- acceptable changes to the price and stock of parking spaces can have a significant impact on mode choice;*
- the primacy of the central city can be maintained through the provision of adequate short-term spaces.*

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INTRODUCTION

Parking policy is proposed as a tool to achieve a variety of transport and non-transport objectives. However, many of the proposed uses of parking policy are based on misconceptions concerning the potential influence of small changes in parking parameters on mode split and location decisions. Furthermore, during studies of parking policy prepared for the Melbourne City Council, Brisbane City Council, Commonwealth Bureau of Roads (now BTE) and the National Capital Development Commission it became clear that parking procedures were invariably inconsistent with stated policies and objectives and that the ability to manipulate parking parameters to achieve city objectives is strictly limited.

The insight gained during parking studies for the above mentioned bodies forms the basis for this paper. In particular, five myths concerning central city parking are discussed. They are:

1. Parking policies and objectives are articulated in a meaningful way.
2. Central city councils have substantial control over the stock of parking space.
3. The cost of parking in central cities is high.
4. Acceptable changes to the price and stock of parking spaces can make a significant impact on mode choice.
5. The primacy of the central city can be maintained by the provision of adequate short term spaces.

MYTH 1: PARKING POLICIES AND OBJECTIVES ARE ARTICULATED IN A MEANINGFUL WAY

For parking policies and objectives to be well articulated it is necessary that:

- .. the objectives of parking policy be clearly stated;
- .. the conflicts between different parking objectives be acknowledged and resolved;
- .. the conflict between the objectives of parking policy and other areas of policy, including urban planning, and traffic be identified and resolved;
- .. the distinction between parking policy, procedures and objectives be made explicit;

- . the interaction between parking procedures, parking policies and objectives be understood;
- . attempts be made to evaluate parking policy to assess the extent to which the desired parking objectives and policies are being achieved by the current set of procedures incorporated in the parking program.

In fact very few, if any, of these conditions are met by the major bodies involved in formulating parking programs. This situation is partly a reflection of factors that cannot be readily overcome.

The main factors that inhibit a clear and workable definition of parking policies and objectives which could form the basis of a well defined parking program to achieve those objectives, are outlined in the following paragraphs.

There are several identifiable groups which have special interests to be served by a parking program. Each of these groups has a different objective function and thus different designs on a parking program. There can thus be no unique and unified set of policies and objectives for a parking program, even in the one city. These interests are unlikely to be satisfactorily resolved through a compromise solution. Instead particular groups will at any time dominate. This in part explains the inconsistencies in parking policies at any one time.

It has been found that the actual performance of a parking program is not always consistent with assumed or desired performance. That is, chosen parking policies are not necessarily being implemented in practice. There are many reasons for this.

There is a constant and continuing process of change in the conditions of parking supply. In response to these changes in local and overall conditions the parking authority introduces marginal ad hoc changes to the parking program which in total may be more significant than major scheduled changes.

In addition the demand for parking spaces, both in total and by customer group is continually changing as a result of urban development, changes in transport costs and other factors. For this reason alone parking programs need to be reviewed in order to ensure that they are achieving the desired objectives. Parking procedures introduced under a particular set of demand and supply conditions are unlikely to be appropriate when those conditions have changed.

Procedures are unlikely to have the effect hypothesised if the existing parking situation is not properly assessed. For example the assumed division of parking demand into short-term and long-term usage may be incorrect if it neglects the extensive illegal (or improper) parking that occurs in all cities to a greater or lesser extent. This question can only be resolved through regular surveys of usage, that take particular note of turnover rates.

Changes in parking programs are very rarely assessed and cannot easily be assessed even if the parking authority accepts assessment as desirable. Changes to parking programs are very frequent and it would not be feasible to monitor the impact of every change.

It is not possible to assess the impact of parking procedures holding all other parameters constant as the ambient environment is continually changing. The relationships between procedure, policy and objective are far from precise. Both the first order effect as well as the wider effects are difficult to predict. It is not possible to obtain detailed knowledge of consumer behaviour and the environment in which the procedures are being implemented that would be required to accurately predict the outcome. Further, where several procedures are implemented together the effect of each procedure cannot possibly be isolated.

Even when it is possible to ascertain the immediate impact, the sequential effects are more difficult to trace, and identify conclusively with the initial procedure. Consider for example the construction of a major car park. The cars that occupy these spaces may in part represent new trips, in part a transfer of mode or a switch in destination. To trace the effect of vacated parking spaces on mode changes is clearly impossible. In addition any resultant change in the patterns of urban location for example into the area with improved car parking facilities is difficult to isolate.

Because of the complexity of the relationship between procedure and effect, parking programs are generally iterative. That is parking programs are essentially reactive to minor and major changes in the local and overall balance between the demand for and supply of car parking spaces, and this is probably inevitable.

A further problem is that because of the legislative and regulatory constraints, procedures may not be available to implement desired policies.

The actual parking program implemented by the various responsible authorities is the outcome of a complicated process of resolution of the conflicts presented by the important interest groups. The outcome of this political process in the form of a selected parking program will not generally be a consistent set of components.

In addition (and partly in consequence) stated parking policies tend to represent the desired aims of parking authorities, rather than a statement of what is being achieved using existing procedures. In other words stated parking policies and parking objectives are not always indicative of the actual impact of parking programs. What this means is that a knowledge of the parking policies and goals of relevant authorities tells little about the effect of parking procedures on the supply of parking spaces and consumer behaviour.

MYTH 2: CENTRAL CITY COUNCILS HAVE SUBSTANTIAL CONTROL OVER THE STOCK OF PARKING SPACES IN THE CBD

Control by central city councils over the total number of parking spaces and the distribution of these spaces between competing classes of users relies on:

- . ownership of off-street parking spaces
- . control over privately owned public access spaces
- . control over private access spaces
- . an ability to alter the number and usage of on-street parking spaces
- . control over parking use of vacant blocks
- . control over the number of parking spaces in existing commercial developments
- . control over the number of parking spaces in new commercial developments.

Central city councils studied, in fact perform relatively unsatisfactorily with respect to all of the above sources of control. They own less than half the parking spaces in the CBD and exercise either minimal or no control at all over private parking spaces. (Suburban councils in general exercise considerably greater control over the stock of parking spaces in their business districts).

The lack of council control can be easily illustrated from an analysis of figures on the ownership of central city parking spaces. Estimates are provided in Table 1 of the breakup of the stock of parking spaces by ownership and access in central Melbourne, Brisbane, Adelaide and Hobart, based on studies conducted during 1976 and 1977. An indication of private ownership of parking spaces in Sydney is also provided. This, however, is based on particularly unsatisfactory data.

It is seen that none of these metropolitan councils have substantial control over the stock of parking spaces in their central business districts. At the time of the studies, spaces under council control numbered between 28% and 47% of the total parking stock. The city councils of Melbourne and Brisbane, in particular, can have only a marginal influence on the pattern of usage of parking facilities.

The situation cannot readily be improved, as it will generally require legislative changes to provide the desired level of control over the use of private car parking facilities. Even then, while it is feasible that some control may be exercised in the future over public access spaces, the possibilities for influencing the conditions of use of private access spaces, which number over one third of all parking spaces, is more remote.

Councils are limited not only in their control over the pattern of usage of parking spaces, but also in their ability to achieve a target stock of spaces in total, or by zone. In general local governments can only reduce the stock of parking spaces by removing council spaces which may be on-street or off-street. This procedure may be considered unacceptable as it will reduce the already small proportion of spaces that are

TABLE 1: CONTROL OF CENTRAL CITY PARKING SPACES

	(a) Melbourne		(b) Brisbane		(c) Adelaide		(d) Hobart		(e) Sydney	
	Number	%	Number	%	Number	%	Number	%	Number	%
City Council Control										
. on-street	9326	26.8	7599	20.9	6611	26.2	1407	21.6	8243	29.7
. off-street	~500	1.4	2644	7.4	5332	21.2	1289	19.8	n.a	n.a
Sub-total Council Control	9826	28.2	10263	28.3	11943	47.4	2696	41.4	n.a	n.a
Private Control										
. public access	~13880	39.8	9247	25.5	~2400	9.5	1682	25.8	n.a	n.a
. private access*	11184	32.0	16726	46.2	~10806	42.9	2137	32.8	9000	32.4
Sub-total Private control	25064	71.8	25973	71.7	13206	52.6	3819	58.6	n.a	n.a
TOTAL PARKING SPACES	34890	100	36236	100	25149	100	6515	100	27743	100

* spaces used by the occupants of the building with which they are associated or offered to visitors free of charge.

Source: (a) "City Area Parking Study November 1976" prepared for the City of Melbourne. (b) Nicholas Clark and Associates, survey conducted during November 1977, and reported in the "Study of Parking Policies (1978)" prepared for the Metropolitan Transit Authority, Brisbane. (c) Adelaide Department of Transport "Metropolitan Adelaide Data Base Study (1978)". The data was collected in March 1977. (d) "Parking Updating Study 1977" prepared for the City of Hobart. (e) Various documents produced by the Sydney City Council - on-street spaces were counted in 1970, the off-street spaces were recorded between 1975 and 1978. No breakdown is readily available of parking spaces by ownership.

under council control, and therefore further limit council influence over the pattern of usage. The stock of parking spaces can more readily be increased by councils either by the construction of public parking garages or by the offering of direct incentives to private entrepreneurs.

Government control over the number of private access spaces can only be exercised when new development permits are issued. If the pace of central city development and re-development is slow, the parking requirements of town planning ordinances provide extremely limited (if any) control over the stock of parking spaces. In fact if the number of parking spaces required in new developments is specified according to the nature of the development only, and not with consideration to the total parking situation, then the net addition to the stock of private parking spaces is tied completely to the pace and nature of development allowing no influence by local government. If, however, parking space requirements in new developments are related to the desired stock of spaces in designated geographical zones, without regard to the nature of the development, some effective control can be achieved over the total number of private parking spaces by councils, particularly during periods of major re-development.

It is abundantly clear that in implementing parking policies councils are limited (more or less severely) by past parking programs. These past actions have determined the percentage of the parking stock that can be subject to council control. Where the stock of parking spaces under council control is extremely small, as it is in Melbourne and Brisbane, it may be necessary to extend this control before parking policy can become an effective and flexible parking tool of metropolitan councils.

MYTH 3: THE COST OF PARKING IN CENTRAL CITIES IS HIGH

It is often suggested that parking costs are high in central cities and that more people would come to the city if parking charges were lower. Attempts have been made by some metropolitan councils to stimulate city shopping by removing meter charges.

The important point that can be derived from studies of central city parking is that the costs of parking are distributed very unevenly between classes of users. In fact many parkers are subject to no direct charge at all for their use of parking facilities and, therefore the average parking cost is very low.

To obtain information on costs of parking in the city it is not sufficient to obtain a table of parking charges, on-street and off-street. It is necessary also to determine how many people obtain spaces at no direct charge, the incidence of concession parking fees for say long term use and the volume of short term and long term parking (which is subject to different hourly rates).

MYTHS OF PARKING POLICY

In Brisbane information on average parking costs was obtained from a driver survey conducted in 1977⁽¹⁾. The main results are reproduced here:

- .. 51.7% of interviewees paid nothing personally for parking their car
- .. 15% paid less than 15¢ per day
- .. 8.5% paid between 50¢ and \$1.00 per day
- .. 14.6% paid between \$1.00 and \$1.50 per day
- .. 13.2% paid more than \$1.50 per day

For those who paid for parking the average charge was close to \$1.20, while if all parkers are included the average daily parking cost was between 50¢ and 60¢.

In Adelaide a large scale home interview survey was carried out during 1977 and included questions relating to parking. The most significant results of that survey in relation to the cost of parking are:

- .. over 80% of commuters with destinations in the city parked free of charge
- .. nearly two thirds of short-term parkers parked free of charge.

For those who paid for parking the average fee was 85¢ and 35¢ for work and non-work trips respectively. The average daily parking cost overall was only about 15¢.

These results clearly show that actual parking costs are very low in the City of Adelaide both to the average parker, and also for those who do pay. This result would not be anticipated from an observation of parking charges for on-street and off-street spaces.

While the average cost of parking in central cities is low, certain groups are subject to substantially higher than average costs. In some cities, including in particular Melbourne, Brisbane and Sydney, the short term parker is subject to significantly higher parking costs. This is caused by their poorer access to free parking spaces and also by the practice of reducing charging rates. Charges in off-street car parks in these cities fall in unit terms with increasing length of stay. In Hobart and Adelaide many car parks have an inverse pricing schedule whereby the charge per hour increases with time, thus penalising the long term parker.

It is clear that to obtain a proper indication of the effective parking charge it is necessary to conduct surveys of parkers. A knowledge of the fee structure provides only a very limited insight into the total cost of parking and its incidence amongst classes of users. The evidence that is available, suggests that the average cost of parking for commuters to the central business district is much lower than charging rates would suggest.

¹ See footnote (b) Table 1

MYTH 4: ACCEPTABLE CHANGES TO THE PRICE AND STOCK OF PARKING SPACES CAN MAKE A SIGNIFICANT IMPACT ON MODE CHOICE

A common objective of governments is to alter mode split to increase utilisation of public transport. It is not always clear if there is a more fundamental purpose to which this objective is directed. It seems, however, to reflect a concern with several factors, including the level of road congestion; the difficulty of maintaining an acceptable level of service to public transport captives in the face of falling public transport use; and a need to restrain increasing public transport deficits.

It is generally thought that parking policy can be used as a major tool in achieving the desired mode split. Work on a recent study conducted for the Metropolitan Transit Authority by Nicholas Clark and Associates (1978) suggests that the effect on mode split that can be achieved from realistic changes to the stock and price of parking is in fact small. Some other studies indicate an even smaller impact on mode split from parking policies.

In the Brisbane study the impact of parking policy on commuter public transport usage was modelled. The principal technique employed involved calibration and operation of an aggregate normal marginal disutility modal split model. (Although more sophisticated models than this are available, the nature of the data base precluded their use.

The model was run assuming in turn:

- .. increases in parking charges from 10% to 200%
- .. reductions and increases in the stock of parking spaces
- .. increase in average walking distances
- .. specific improvements to the public transport system.

The postulated effects of an increase in parking charges and a reduction in the stock of parking spaces are reported here.

A small real increase in parking charges (of 10% or less) was estimated to have no effect on mode split. A 25% increase in real¹⁾ parking charges was postulated to reduce car usage from 46% to 43% and increase rail and bus patronage from 32% to 34% and 22% to 23% respectively, of total CBD trips. A 50% real increase in parking charges was postulated to reduce car usage further to 40% of CBD travellers and a 100% increase to result in only 35% car users.

While the higher parking charges will, according to the model, divert a significant number of travellers to public transport, real increases in parking charges of 100% or even 50% which would be necessary for significant rises in public transport use, would be met with consumer resistance.

¹ To obtain a real increase of 25%, parking charges would have to be scaled according to the consumer price index and in addition increased by 25%

The model also estimated that if all on-street parking spaces were removed, (these currently amount to 20.9% of the total parking stock) car usage would fall from 46% to 37%. It also estimated that a 25% (50%) reduction in public access off-street spaces (accounting for 8.2% (16.4%) of total parking spaces in the CBD) would increase public transport share by 3 (8) percentage points.

These effects on mode split while significant are achievable through rather drastic policies. The reductions in car parking spaces of the order discussed in the previous paragraph are particularly draconian when it is remembered that the recent trend in the supply of parking stock has been for a steady increase in the number of spaces.

The limited possibility for changing mode split reflects two main factors common to most metropolitan cities in Australia:

- (i) The extensive availability of private access car spaces.
- (ii) The need for parkers to make use of a car during the day.

There is a large stock of parking spaces in central cities that are available for private use only, and over which governments have no control. In Brisbane for instance, nearly half (46.1%) of the stock of parking spaces are private access only. In Adelaide the figure is about 43%. As a consequence, many parkers have access to a reserved space and will not be directly influenced by government parking policy. In addition a large percentage of parkers do not pay directly for their parking spaces. A survey conducted of over 1000 parkers in Brisbane indicates 52% non-paying users. They will not be easily influenced by a change in the price of parking spaces.

If a car has to be used during the day the commuter cannot easily switch to public transport and is therefore captive to the car. The survey in Brisbane identified a significant proportion (28.5%) of parkers as having to use their cars during the day. Government parking policy can only be influential on those persons who don't have access to a private parking space and don't need to use their cars during the day. Policies that result in increases in the price of parking spaces and a reduction in public parking spaces will therefore operate unevenly on city parkers.

It is clear that parking policy is an effective tool for changing mode split in favour of public transport. However major shifts in mode split can only be achieved through significant increases in parking charges, of more than 50% in real terms, or through significant reductions in the stock of parking spaces, of at least 10%.

The possibility of using parking policy to increase public transport usage for other than city trips is even less than calculated above. This is a reflection of the general inadequacy of the public transport service to business centres other than the CBD. The main effect of any severe limitation on the parking stock in these other areas would be on outward migration of activities.

The long term effect of a restrictive parking policy in the CBD may well be undesirable. Any major price increases or reductions in parking spaces would have to be implemented with caution to allow monitoring of undesirable side effects so that programs can be adjusted as required. While a change in mode split can be achieved, because of the size of the price increases or the severe restrictions in parking space necessitated, some unwanted negative effects will result. These include:

- .. Discrimination against low income persons.
- .. Discrimination against persons relying on public access spaces compared with persons using private access spaces. The latter will tend to consist largely of shoppers.
- .. A disincentive for activities that require many parking spaces to locate in the city.

MYTH 5: THE PRIMACY OF THE CENTRAL CITY CAN BE MAINTAINED BY THE PROVISION OF ADEQUATE SHORT TERM SPACES

There appears to be general agreement that insufficient parking spaces in central cities are allocated for short term use. In most cities private car parks discriminate in favour of long term users and councils have attempted to restore the balance by allocating most of council parking facilities for short term use. This is achieved either through time restrictions, meters or inverse pricing.

Unless council parking spaces are situated in the most central locations they will be of little interest to short term parkers.

There are several possible side effects that place a limit on the extent to which a policy to switch the balance in favour of short term users should be pursued. If in particular, short term spaces are supplied at the expense of long term spaces the following effects will be encouraged:

- .. Increases in illegal long-term parking.
- .. Relocation of activities that require long-term parking out of the city.
- .. A reduction in the number of commuters entering the city. As commuters are also shoppers this would affect retail activity as well as other business activity.

If, on the other hand, short-term parking spaces are increased by a net addition to the parking stock this may cause other problems including:

- .. increased traffic congestion in the city, and
- .. the need to maintain undesirable on-street spaces.

It is none-the-less important that adequate short-term parking spaces be provided for business use, loading/unloading and shoppers in the location required. By their nature short-term parking spaces must be located close to the demand.

While provision of adequate short-term spaces is necessary this policy cannot maintain the primacy of the central city. There are many powerful factors causing a decline in the primacy of the central city over which the metropolitan councils have no control. These include:

- .. increased car ownership resulting in fewer public transport captives
- .. suburbanisation of metropolitan cities
- .. existence of major regional shopping and employment centres
- .. strictly limited road capacity into and within central cities
- .. a slowdown in the growth of the service sector
- .. an increased productivity in the service sector, which reduces jobs in that sector in a slow growth economy.

Thus, while metropolitan councils are understandably concerned to maintain the primacy of the CBD, the provision of adequate short term parking spaces, though important for various reasons, cannot maintain the role of the CBD.

CONCLUSION

In this paper we have outlined five commonly held ideas in relation to parking policy and explored these ideas to indicate why they are generally not valid. We can from this exploration specify the major tasks necessary for the selection of an effective parking program.

In most cases studied there is a significant gap between stated objectives of parking programs, and the actual effect of these programs. This reflects, in part, inadequate information about the current stock and usage of parking spaces. It is clear that prior to useful discussion on objectives, policies or procedures of a parking program, a current knowledge of the stock and usage of parking spaces must be obtained.

We have identified six main tasks for the derivation of a parking program. These are:

A survey of parking spaces: In the survey of parking spaces it is necessary to categorise spaces by ownership, access, time and other restrictions, legal and improper as well as location and on-street/off-street. It is also necessary to obtain an indication of average vacancies in each category.

A survey of parkers: A survey of parkers is required to obtain information on such parameters as the real cost of parking for different categories of user, extent of reserved spaces, the extent of car usage during the day, alternative modes of transport to the city available to parkers (and other variables as required).

Statement of objectives: The possible objectives of a parking program can be reviewed with the relevant authorities to obtain a clear statement of the most important objectives of the parking program. The way these objectives complement (or conflict with) other council programs and state government policies should also be outlined.

Select policies: A set of policies must be identified that will contribute to the identified objectives.

Select procedures: A range of procedures are available which can be analysed for their likely impact on the demand for and supply of parking spaces. An initial selection can then be made, which must be sufficiently flexible to enable adjustments indicated from an evaluation of the effects of the parking program.

Evaluate program and modify: As explained in the paper a parking program must be subject to continued monitoring. The results of the selected parking procedures are not easy to predict and in addition demand and supply conditions change. Also objectives may be revised. Therefore evaluation of the program and modification as indicated must be a continuing element of a parking program.