PARKING DEMAND & TRIP GENERATION

GABITES PORTER Consultants Christchurch, New Zealand

ISBN 0-478-10515-0 ISSN 1170-9405

© 1996, Transit New Zealand PO Box 5084, Lambton Quay, Wellington, New Zealand Telephone (04) 499-6600; Facsimile (04) 496-6666

Gabites Porter Consultants. 1996. Parking demand and trip generation. *Transit New Zealand Research Report No. 57.* 28pp.

Keywords: land use, New Zealand, parking, parking demand, survey, traffic, traffic surveys, trip generation, urban, uses, vehicle trips

AN IMPORTANT NOTE FOR THE READER

While this report is believed to be correct at the time of publication, Transit New Zealand and its employees and agents involved in preparation and publication cannot accept any contractual, tortious or other liability for its content or for any consequences arising from its use and make no warranties or representations of any kind whatsoever in relation to any of its contents.

The report is only made available on the basis that all users of it, whether direct or indirect, must take appropriate legal or other expert advice in relation to their own circumstances and must rely solely on their own judgement and such legal or other expert advice.

The material contained in this report is the output of research and should not be construed in any way as policy adopted by Transit New Zealand, but may form the basis of future policy.

CONTENTS

	ECUTIV STRAC	TE SUMMARY Γ	6 7
1.	INTI	RODUCTION	7
2.	MET	THODOLOGY	8
	2.1	Questionnaires	8
	2.2	Wider Issues	8
	2.3	Specific Land Uses	8
3.	WID	ER ISSUES	9
	3.1	The Distribution of Goods, and Mixed Use Zones	9
	3.2	Aggregating Establishments	10
	3.3	Parking Standards to Relieve Existing Problems	10
	3.4	Changes in Use of Buildings	11
	3.5	Saturday Shopping and Changed Hours	12
	3.6	Office Parking in Central Business District (CBD)	13
	3.7	Other Issues of Concern	14
4.	SPE	CIFIC LAND USES	15
	4.1	Grading System	15
	4.2	1988 List With New Gradings	15
	4.3	Revised List	15
5.	ACT	TON REQUIRED	18
	5.1	Specific Land Uses	18
	5.2	Available Data	19
	5.3	Wider Issues	19
6.	REC	COMMENDATIONS	22
API	PENDIX		
1.	OUE	STIONNAIRE	2.5

EXECUTIVE SUMMARY

In 1988 the Traffic Committee of the Road Research Unit, of the former National Roads Board (now Transit New Zealand), compiled a priority listing of land uses for which data on parking demand and trip generation were required by traffic engineers and town planners. That work also defined a related group of wider issues of concern. The data and the information or guidance on the wider issues were potentially very helpful to practitioners involved in land use development or control.

Various attempts had been made in the past to pool survey results, to carry out surveys using standard formats, and to make collected information available, but little real progress had been made.

The present project carried out in 1992 was to review and revise the 1988 work. Questionnaires were sent to ten local authorities and, although the number of responses was therefore not high, the high quality of a small number of these responses provided good information.

Most of the wider issues defined in 1988 were still regarded as problem areas. The priority of data for some land uses had changed and the wider issue problems were reflected in the need for data on individual uses.

Other needs that were identified in 1992 were to improve parking in older centres, where off-street parking is often inadequate, and to compile a set of recommendations for local authorities with this sort of problem.

Recommendations are made for surveys of parking that is shared by different uses, and for a review of techniques available for providing parking in older commercial centres. Four groups of specific land uses for which further data need to be gathered on parking demand and trip generation are:

- Hospitality
- hotels, restaurants and small taverns
- Commercial
- offices, post offices, banks, shopping centres and supermarkets
- Institutional
- educational, hospitals and rest homes
- Recreational
- marinas, sports fields and stadiums.

The responses to the questionnaire used in this project were not enough to indicate the amount of data existing in-house or in other available forms. Consequently, gathering data about specific land uses should use a more specific and focused approach to seek data available from these sources.

ABSTRACT

Lists showing priorities of land uses for which data on parking demand and trip generation were required by traffic engineers and town planners have been prepared.

The information was obtained from responses to questionnaires sent to ten local authorities in 1992, and it was used to review and revise priorities established in 1988. The work also reviewed the wider issues of parking demand defined in 1988.

Recommendations are for surveys of parking that is shared by different uses, and for a review of techniques available for providing parking in older commercial centres. Four groups of specific land uses are defined for which further data need to be gathered on parking demand and trip generation.

1. INTRODUCTION

This present project was carried out in 1992 to review and revise work carried out in November 1988 by the Traffic Committee of the Road Research Unit, of the former National Roads Board (now Transit New Zealand). It had been recognised at that time that parking and traffic surveys often occur on an ad-hoc basis, concentrating on specific land use developments as and when required. Little interchange of data took place between parties who could also use the information, especially data relating to parking demand and trip generation.

The 1988 work drew up a list of current issues and a priority listing of land uses that required further data for use in land use development or control.

The 1988 data generally took the form of:

number of parked vehicles,

person trips, vehicle trips,

commercial vehicle trips,

related to floor areas.

employment, or

other measures of intensity of activity,

and may include length of stay,

variation with time, vehicle occupancy.

The 1992 project extended that work with the following objectives:

- 1. To review and revise, as required, the wider issues as they had been determined in November 1988.
- 2. To review and revise, as required, the priority listing of land uses requiring further data arising from the 1988 determination.
- 3. To prepare a listing of available land use survey data.
- 4. To identify which land uses on the priority list require additional survey data.

2. METHODOLOGY

2.1 Questionnaires

The project was carried out by sending a questionnaire to ten large local authorities requesting their participation. Responses were received from six of them, after extensive reminders and re-contacts.

The questionnaire, attached as Appendix 1, was in two major parts that related to:

- A. Wider issues
- B. Specific land uses

It was generally open-ended in style, intended to elicit information on the widest front, rather than to confine the responses to the answers to specific questions. Some authorities found the questionnaire difficult to answer in that format and responded with general comments. Where explicit answers were requested for Part B (on specific land uses), only three of the responses were adequate.

2.2 Wider Issues

Part A, Wider Issues, set out six issues which had been identified in 1988 and asked for comments on the current relevance of each item. A seventh section asked for other issues, comments or concerns.

2.3 Specific Land Uses

Part B, Specific Land Uses, set out the land uses of the 1988 lists in three categories of priority: High, Medium and Low. Respondents were asked to re-allocate priorities for each item and to indicate the availability of survey data, both in-house and from other sources.

3. WIDER ISSUES

The results of Part A, Wider Issues, of the questionnaire are set out in Sections 3.1 to 3.7. The questions (in italics) are given first, followed by summaries of the responses (in normal type).

3.1 The Distribution of Goods, and Mixed Use Zones

20 years ago there was a distinct chain through which most goods circulated manufacturing to warehousing to retailing. Today this has all but broken down. Many retail outlets now hold reduced amounts of stock resulting in a shift from a few deliveries by large trucks to many deliveries by small trucks. There is also an increase in direct-to-public selling at wholesale outlets/warehouses often within what once were exclusively industrial zones. A more broad brush approach to parking demand and traffic generation is necessary, particularly for industrial zones. These might be better termed mixed use zones.

Is this still considered an issue?

Do you have any survey data to support or refute the above?

Has your approach to the above land uses, particularly industrial, changed significantly in the past 5 years and if so, how?

The responses indicated that an issue still exists that is related to goods distribution parking, but there was little evidence upon which to base assumptions. Some councils are due to review their District Schemes but little change in parking or loading requirements for these zones is anticipated.

Christchurch City Council has introduced "Business Zones" close to the Central Business District (CBD) to provide the opportunity to establish a wide range and combination of uses. The zones are intended to complement the central commercial zones and to enable the central city to compete with suburban centres.

Some, but not all, city authorities found that industrial zone "factory shops" create parking problems because District Plans do not require developers to provide parking spaces in sufficient numbers to deal with a "retail" type of activity. In older parts of cities some buildings are being "recycled" from industrial to retail uses. This can create a parking demand that cannot be met on the site.

The Resource Management Act 1991 was mentioned as an influence, with an emphasis on the performance of a land use rather than on the type of floor space mix.

3.2 Aggregating Establishments

How should the addition of a new development to an existing centre be treated with respect to additional traffic generation and parking demand? Should it be treated in isolation or should some reduction be allowed to account for part of its patronage being people already at the centre? Equally, how should traffic generation and parking demand be assessed for a new shopping centre containing a range of developments? Should requirements for each individual development simply be added or should some reduction be allowed for the overall centre to account for people visiting more than one development and for differing peak periods?

Is this still considered an issue?

If not, how has it been resolved?

Do you have any survey data for assessing the above issue?

From the responses it appeared that aggregated establishments draw patronage from both existing facilities and those further afield. A Brisbane City Council survey, used by Christchurch City Council, suggested that a constant six parking spaces/100m² of gross floor area is appropriate. Generally the parking demand remains the same because duration of stay increases.

Dispensations are given by some respondents, mainly if the peak parking accumulations of two developments occur at different times, i.e. shopping centres and hotels sharing the same parking area. Sometimes adjacent off-street parking may be taken into account in planning applications where there is a parking shortfall.

Respondents saw a need to establish trip generation rate data that is uniform for New Zealand and parking demand data for "stand alone" developments, together with a methodology for reducing design requirements for developments taking place in close association.

3.3 Parking Standards to Relieve Existing Problems

Are you currently experiencing any problems under your existing parking standards due to recent changes in parking demand at the various land uses?

If so, what are they and what supporting evidence, e.g. survey data, do you have?

Have you recently changed or are you currently considering changing your parking standards due to recent changes in parking demand. (These changes could either be increases or reduction in the parking requirement.)

If so, what supporting evidence do you have?

Answers from respondents indicated no major problems, but some specific matters were mentioned:

- The protective legislation exempting the Crown from District Plan requirements has resulted in hospitals, universities and some government departments providing insufficient parking for their needs.
- Problems have arisen in older industrial areas, where little or no off-street parking facilities are provided. As a result, there is a demand for kerbside parking in adjacent residential areas. Most developments that could create this problem occur close to similar developments so that the individual uses and requirements are difficult to survey in isolation. Such reliance on kerbside parking also makes individual parking demands difficult to identify.
- One respondent (Christchurch City Council) expressed the view that weekend shopping has affected parking demand.
- Small developments (often industrial uses), of say 1000m² floor area with no
 off-street parking area, cause problems. These developments put pressure on
 kerbside parking so that measures, such as 30 or 60 minute parking
 restrictions and specially designated resident parking areas, may need to be
 introduced.

Overall, little change to current District Plan requirements seemed to be planned in 1992, but only two cities indicated the existence of survey data.

3.4 Changes in Use of Buildings

Within the allowable uses, a building use may change from a low generator to a high generator. It is impossible to administer these changes, and giving dispensations, such as parking requirements, based on the existing specific use is therefore not practical. A flexible, workable procedure is required to accommodate the wide range in traffic generation that can exist for any type of land use.

How do you deal with this issue?

Do you give dispensations or do you adhere to the standard requirements?

Does adoption of the standard parking requirement cause problems when the land use is at the high end of the range of generators?

Do you consider more land use types should be defined or should there be subgroups for each land use for low, medium and high generators within that land use?

Could this be administered fairly and efficiently?

Do you have any survey data to support your views?

Answers to this question reflected previous answers in that any problems were generally manifested as a problem of a centre or group of uses, rather than of a particular use. The most obvious problems seemed to occur in centres with very little provision for off-street parking. The development of restaurants in such centres was specifically identified as such a problem.

Dispensations from District Plan requirements were available from some authorities but are given with caution, and sometimes inconsistently.

One respondent (Tauranga District Council) thought that defining additional groups of uses would be useful. Others (Auckland, Christchurch and Dunedin City Councils) felt that it would be unwise to allow developments at the low end of the intensity scale to provide for significantly less parking, because of the likely changes in use in the life of a building. Therefore additional groups of uses were not favoured by these respondents.

The administrative problem of coping with changes in allowable uses was a clear concern, and lack of resources to monitor such changes was mentioned.

3.5 Saturday Shopping and Changed Hours

What has been the effect?

Are the seasonal variations as marked as previously?

Have you made any changes to your standards?

Has the recent trend to Sunday shopping had any additional effect?

Most respondents (Auckland, Tauranga, Christchurch and Dunedin Councils) agreed that Saturday shopping spreads the demand (and takes pressure off Friday night parking). Generally weekend parking is not a problem as the absence of non-retail activity reduces the total demand. However, areas around shopping centres may experience more weekend traffic than in the past.

The rise in "recreational" shopping may have led to visits of longer duration to shopping centres. This was considered a possibility because no clear reduction in weekday peak parking demand was observed, although no data were offered.

Survey data will be needed when District Plan reviews occur.

3.6 Office Parking in Central Business District (CBD)

What minimum parking levels do CBD offices require to function?

Do you have any data to support this?

Do you have a maximum allowable parking provision for CBD offices to constrain the number of private commuter vehicles entering the CBD?

How does this fit into your overall CBD policy for controlling on-street and off-street (public and private) parking?

Some respondents (Auckland, Tauranga and Christchurch Councils) felt that their parking ordinances represented the minimum levels for offices to function. Several respondents (Auckland, Christchurch and Dunedin Councils) had carried out central area surveys showing the overall parking situation. These surveys can probably be related to land use and employment data.

The larger cities tended to have tightest control on CBD parking provisions. Smaller cities had no restraints.

The restraints took the form of either an upper limit on the amount of parking that could be provided, or no requirement for off-street parking so that the developer could choose whether to provide it or not. Most Councils took at least part of the responsibility for the provision of central area parking.

The large cities had better defined policies relating to the control of traffic volumes, provision of commuter parking, and promotion of public transport as co-ordinated packages. The smaller cities tended to have no specific policy.

One respondent (Christchurch City Council) noted empty CBD office space and a shift of office employment to the suburbs. Accessibility for employees and customers was given as an important factor in that shift.

3.7 Other Issues of Concern

Two issues were raised:

- A major problem in applying the available survey data was accounting properly for shared parking spaces and the effect of single vehicle trips being made to visit several establishments.
- A major parking issue was how to provide for parking in existing older centres. It is difficult, and undesirable, to provide parking on each lot when changes of use, redevelopment or minor additions occur. Dispensations or money-in-lieu are often not appropriate.

Because the existing ordinances requiring on-site parking are often unworkable and undesirable in existing centres, a different approach seems to be needed. For example, shared parking could be provided collectively, with perhaps special rating areas to provide and manage parking for the centre, with contributions from individual developers when changes or developments are made.

Such an approach could have wider benefits in providing a coherent management structure to the centre. It could encourage the promotion and development of the centre as well.

4. SPECIFIC LAND USES

The responses to Part B of the questionnaire (Appendix 1), relating to specific land uses, are presented in the following sections. It should be noted that only three responses were useable.

4.1 Grading System

A grading point system was used to identify the land uses where action should be taken to gather more data on trip generation and parking demand.

Each reply to the questionnaire was allocated points, that were totalled across all of the returned questionnaires, as shown in Table 1.

Table 1. Points allocated to questionnaire replies.

Priority	In-house Data	Other Data	Points
High	None	None	3
Medium	Few	Few	2
Low	Some	Some	I
No issue	Many	Many	0

Examples:

Three responses indicating high priority totalled 9 points.

Two responses indicating few in-house data and one indicating some

in-house data, totalled 5 points

4.2 1988 List With New Gradings

The new grading points for the items on the list, in the order established in 1988, are those in Table 2.

4.3 Revised List

The list of land uses given in Table 2 has been re-ordered in Table 3 to reflect the priorities established by the respondents to the 1992 survey, using arbitrary rating divisions to distinguish between high and low priorities. Note that, within the priority groupings, the items are listed alphabetically.

Table 2. Grading points allocated in 1992 to original 1998 listing.

Land Use	Priority	riginal 1998 listing. Existing Survey Data		
	Rating	In-house	Other	
High Priority 1988				
Restaurants	9	6	3	
Hotels	6	5	3	
Small taverns	9	6	3	
Offices	5	5	3	
Roadside stalls (rural)	4	6	4	
Stadiums	4	4	3	
Convention centres	4	6	5	
Medium Priority 1988				
TAB	4	6	4	
Fast food places	4	6	3	
Rest homes	4	6	3	
Retirement villages/ Hospices	4	6	3	
Educational establishments	6	6	3	
Service stations	2	3	3	
Post offices and banks	4	6	3	
Hospitals	5	5	3	
Sports fields and facilities	4	6	3	
Lotto outlets	4	6	4	
Tourist uses	5	6	5	
Low Priority 1988			Ψ (************************************	
Urban renewal areas	2	6	3	
Libraries	3	6	3	
Garden centres	4	6	3	
Not Listed in 1988				
Churches	3	_	_	
Community centres	3	_	_	
Food barns	1	_	_	
Marinas	5		_	
Recreation reserves	3	_	_	
Automatic teller machines	4		_	
Suburban shopping centres	4	euna.	_	
Supermarkets	4	_	_	
Retail outlets	3	_	_	
Kohunga Reo schools	3		_	
Multiplex cinemas	3		_	
Bowling alleys	3		_	
Video hire outlets	3	_	_	
Appliance stores	3	_	_	

Table 3. Land use priorities established from 1992 survey.

Land Use	Priority Rating	Existing Survey Data	Require More Data
High Priority			200
Educational establishments	6	F (few)	Y (yes)
Hotels	6	F	Y
Restaurants	9	F	Y
Small taverns	9	F	Y
Medium Priority			
Automatic teller machines	4	F	Y
Convention centres	4	F	Y
Fast food places	4	F	Y
Garden centres	4	F	Y
Hospitals	5	F	Y
Lotto outlets	4	N (none)	Y
Marinas	5	F	Y
Offices	5	S (some)	Y
Post offices and banks	4	F	Y
Rest homes	4	F	Y
Retirement villages/ Hospices	4	F	Y
Roadside stalls (rural)	4	N	Y
Sports fields and facilities	4	F	Y
Stadiums	4	F	Y
Suburban shopping centres	4	F	Y
Supermarkets	4	F	Y
TAB	4	N	Y
Tourist uses	5	F	Y
Low Priority			
Appliance stores	3	N	N (no)
Bowling alleys	3	N	N
Churches	3	N	N
Community centres	3	N	N
Food barns	1	N	N
Kohunga Reo schools	3	N	N
Libraries	3	F	N
Multiplex cinemas	3	N	N
Recreation reserves	3	N	N
Retail outlets	3	F	N
Service stations	2	M (many)	N
Urban renewal areas	2	N	N
Video hire outlets	3	N	N
Wholesale liquor	3	N	N

5. ACTION REQUIRED

5.1 Specific Land Uses

Surveys should clearly focus on the high priorities and on stated needs for more data. In addition, attention should be given first to those uses judged likely to affect a greater number of authorities. For example many authorities are likely to be concerned with the characteristics of small taverns, but few authorities will be concerned with the characteristics of universities

High Priority

- educational establishments
- hotels
- restaurants
- small taverns

The last three uses fit in with the mixed use and old centre re-development scenes identified in Part A of the questionnaire. Surveys of all four uses are recommended as having the *highest priority*.

Medium Priority

- offices
- post offices and banks (automatic tellers)
- suburban shopping centres
- supermarkets

This group includes *Commercial Uses* which would produce widely applicable data and where a need seems to be apparent.

Surveys of these uses would contribute data to several of the questions raised, including individual problems, demand in mixed situations, weekend trading effects, and central city office demand.

Institutional Uses can also be defined where collective surveys would be well received by local authorities. This group includes:

- educational establishments
- hospitals.

and possibly - rest homes/ retirement villages/ hospices

Recreational Uses could be a useful extension of these three groups of uses to be considered. This group includes:

- marinas
- sports fields
- stadiums

Factory Retail Uses was an item that was not specifically included, but did spark some discussion. These uses often occur in industrial zones. The characteristics of these uses may range widely (from clothing to bathrooms) but some indicative surveys should be included in the Commercial Uses group.

5.2 Available Data

As can be seen from the priority list (Table 3) and the previous discussion, very little in-house data seems to be available for most of these land uses, but using such a small number of responses as in this survey does not give a good indication of how much data may actually be available.

When decisions are made on data-gathering projects, the first task should be to approach local government and other agencies to search for data on very specific land uses. That approach is more likely to produce results than the rather wide approach that was taken for this 1992 project.

It was evident, from telephone contacts and the written responses to the questionnaires, that local authorities frequently do not have the resources to respond adequately to requests for information. The lack of resources also meant that only a few authorities were actively engaged in gathering parking data. In those circumstances co-operation in gathering data on specific land uses or groups of uses may be difficult to achieve.

The best chance of gaining co-operation with local authorities would be to ask them to carry out surveys on the problems which seem to be the most widespread and have the highest priority (as identified by this 1992 survey). Local authorities are more likely to see benefits in such proposals and more likely to justify allocating resources to such surveys.

Very few authorities indicated what was the availability of their good data, other than from standard published sources. Table 4 summarises the survey data that were received from the respondents.

5.3 Wider Issues

The matters raised in Part A, Wider Issues, of the questionnaire seem to be largely covered by the more specific priority lists, with the following exceptions.

Predicting how the parking demand or traffic generation of an area will change
when a land use change occurs within the area is an issue. This is a particular
problem in mixed retail and industrial centres, generally in older centres with
little off-street parking.

would be to survey a series of such centres to gain an understanding of the effects that size and land use mix may have. The effects of other factors, such as location, competition, catchment characteristics, will have an influence on the results which could be as great as the influence of different land use mixes. The results will be difficult to interpret.

Advice from such surveys is likely to be based on inference rather than on direct evidence from the data, because of the differences between centres caused by factors other than those measured in the surveys.

This issue is related to the general matter of parking shared by different land uses. To make progress on that matter, surveys of stand-alone supermarkets could be compared with surveys of mixed supermarket—speciality shopping centres to determine overall arrival rates, lengths of stay, and peak parking demands.

The surveys could be extended to other groups of uses which currently share parking. Examples may be mixes of supermarket-hotel-restaurant-theatre land uses. Considerable searching may be necessary to find useful mixed uses which are sufficiently isolated as a group from which good data can be obtained.

 Dealing with change in existing older centres, where the existing parking ordinances are inappropriate because of an overall lack of off-street parking and where ad-hoc redevelopment of individual sites is undesirable, is another issue.

This issue requires an exploration both of the techniques that are available for providing parking, and of the experience of those who have used the techniques. A compilation of previously used techniques, their advantages, disadvantages and results, together with a review of newer possibilities and of the present legal—political—economic framework would be useful.

Since such older centres often occur on important network roads, and often at intersections, focusing on their needs in this way is likely to have benefits. If kerbside parking can be reduced and property access arrangements can be improved at such centres, then road traffic generally will benefit.

Table 4. Summary of survey data received from the respondents.

Respondent	Торіс	Date when information received	Source of external data	Willing to have wider exchange
Waitakere City Council	_	_	_	_
Auckland City Council	 Central City office buildings (floor space, employee space, and parking spaces) Cash-in-lieu study (mechanisms and appropriate areas) 	1986-1987 1992		Yes
Tauranga District Council	Aggregation of land uses Existing development parking surveys Change of use parking surveys Wholesale liquor outlets parking Marinas Stadiums		_	_
Lower Hutt City Council		_	_	
Christchurch City Council	Aggregation of land uses Existing development parking surveys Hotels - parking numbers Offices - parking numbers	1985 - - - -	Brisbane City Council survey of 39 retail centres	Yes
	Retail - parking numbers Hospitals - parking numbers Stadiums - parking surveys Service stations	- - 1991		
Dunedin City Council	CBD parking report	1990		Add to

6. **RECOMMENDATIONS**

Surveys of parking shared by different uses, and a review of techniques available for providing parking in older commercial centres, should be made.

Four groups of specific land uses for which further data need to be gathered on parking demand and trip generation are:

- Hospitality hotels, restaurants and small taverns.
- Commercial offices, post offices, banks, shops and supermarkets.
- Institutional educational, hospitals and rest-homes.
- Recreational marinas, sports fields and stadiums.

Gathering data about specific land uses should use a more specific and focused approach to seek out existing data from in-house and other sources.

APPENDIX 1. QUESTIONNAIRE



APPENDIX 1. QUESTIONNAIRE

This appendix is a copy of the questionnaire that was sent to ten large local authorities in 1992 to review and revise the information that was gathered in 1988. The questionnaire is based on matters arising from a meeting held in November 1988 of the Traffic Committee of the Road Research Unit, National Roads Board (now Transit New Zealand).

The aims of the questionnaire were twofold:

- 1. To establish which of the issues of concern in 1988 are still valid today, and to add any other issues that have arisen in the intervening years, and
- 2. To revise as required the list of land uses requiring more survey data.

A. WIDER ISSUES

1. Distribution of Goods and Mixed Use Zones

20 years ago there was a distinct chain through which most goods circulated: manufacturing to warehousing to retailing. Today this has all but broken down. Many retail outlets now hold reduced amounts of stock resulting in a shift from a few deliveries by large trucks to many deliveries by small trucks. There is also an increase in direct-to-public selling at wholesale outlets/warehouses often within what once were exclusively industrial zones. A more broad brush approach to parking demand and traffic generation is necessary, particularly for industrial zones. These might be better termed mixed use zones.

Is this still considered an issue?

Do you have any survey data to support or refute the above?

Has your approach to the above land uses, particularly industrial, changed significantly in the past 5 years and if so, how?

2. Aggregating Establishments

How should the addition of a new development to an existing centre be treated with respect to additional traffic generation and parking demand? Should it be treated in isolation or should some reduction be allowed to account for part of its patronage being people already at the centre? Equally, how should traffic generation and parking demand be assessed for a new shopping centre containing a range of developments? Should requirements for each individual development simply be added or should some reduction be allowed for the overall centre to account for people visiting more than one development and for differing peak periods?

Is this still considered an issue?

If not, how has it been resolved?

Do you have any survey data for assessing the above issue?

3. Parking Standards to Relieve Existing Problems

Are you currently experiencing any problems under your existing parking standards due to recent changes in parking demand at the various land uses?

If so, what are they and what supporting evidence, e.g. survey data, do you have?

Have you recently changed or are you currently considering changing your parking standards due to recent changes in parking demand? (These changes could either be increases or reduction in the parking requirement.)

If so, what supporting evidence do you have?

4. Changes in Use of Buildings

Within the allowable uses, a building use may change from a low generator to a high generator. It is impossible to administer these changes and giving dispensations, such as parking requirements, based on the existing specific use is therefore not practical. A flexible, workable procedure is required to accommodate the wide range in traffic generation that can exist for any type of land use.

How do you deal with this issue? Do you give dispensations or do you adhere to the standard requirements?

Does adoption of the standard parking requirement cause problems when the land use is at the high end of the range of generators?

Do you consider more land use types should be defined or should there be subgroups for each land use for low, medium and high generators within that land use?

Could this be administered fairly and efficiently?

Do you have any survey data to support your views?

5. Saturday Shopping and Changed Hours

What has been the effect?

Are the seasonal variations as marked as previously?

Have you made any changes to your standards?

Has the recent trend to Sunday shopping had any additional effect?

6. Office Parking in CBD

What minimum parking levels do CBD offices require to function?

Do you have any data to support this?

Do you have a maximum allowable parking provision for CBD offices to constrain the number of private commuter vehicles entering the CBD?

How does this fit into your overall CBD policy for controlling on-street and off-street (public and private) parking?

7. Any Other Issues of Concern or Comments?

B. LAND USE REQUIRING MORE DATA

Below is the list of land uses requiring more data drawn up at the 1988 meeting. Could you please adjust/amend the list as required to match your current data requirements by:

- crossing out land uses for which you have sufficient data
- changing the priority of any listed land use
- adding land uses to the list

Could you also please indicate the extent of available survey data you have for each land use (either in-house or from other sources) using an N (none), F (few), S (several) or M (many).

A. High Priority

Existing Survey Data
In-house Other Sources

- Restaurants
- · Hotels
- · Small taverns
- Offices
- Roadside stalls (rural)
- Stadiums
- Convention Centres

B. Medium Priority

Existing Survey Data In-house Other Sources

- TAB
- Fast food places
- · Rest Homes
- Retirement villages/hospices

(visitors and staff)

• Educational establishments

(including night school)

Service Stations

(their use is changing to include supermarket sections)

- · Post Offices and banks
- Hospitals
- Sports fields and facilities
- Lotto outlets
- Tourist uses, e.g. Kelly Tarlton, Microworld

C. Low Priority

- Urban renewal area (med-high density)
- Libraries
- · Garden centres