
**INDUSTRY
COMMISSION**

**Taxation and Financial
Policy Impacts
on Urban Settlement**

Volume I: Report

REPORT NO. 30

7 APRIL 1993

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7 April 1993

The Honourable J S Dawkins MP
Treasurer
Parliament House
CANBERRA ACT 2600

Dear Treasurer

In accordance with Section 7 of the Industry Commission Act 1989, we have pleasure in submitting to you the report on Taxation and Financial Policy Impacts on Urban Settlement.

Yours sincerely

Gary Banks
Presiding Commissioner

Hylde A Rolfe
Associate Commissioner



Acknowledgements

The Commission is grateful for the cooperation and assistance of the many participants in this inquiry.

The Commissioners also record their appreciation of the application and commitment of the staff who assisted in the preparation of this report.

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
AGPS	Australian Government Publishing Service
AIUS	Australian Institute of Urban Studies
CBD	central business district
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DHHCS	Department of Health, Housing and Community Services
DITAC	Department of Industry, Technology and Commerce
EPAC	Economic Planning and Advisory Council
GBEs	government business enterprises
HALCS	Housing and Locational Choice Survey
HALPS	Housing and Locational Preferences Survey
HIA	Housing Industry Association
IAC	Industries Assistance Commission
IC	Industry Commission
IPC	Indicative Planning Council
LARP	Local Approvals Review Program
LGA	local government area
NCPA	National Capital Planning Authority
NHS	National Housing Strategy
OECD	Organisation for Economic Co-operation and Development
OLG	Office of Local Government
REIA	Real Estate Institute of Australia
RTA	NSW Roads and Traffic Authority
SAULT	South Australian Urban Land Trust
SWB	Sydney Water Board
UDIA	Urban Development Institute of Australia
ULA	Urban Land Authority
WAWA	Water Authority of Western Australia

TERMS OF REFERENCE

I, JOHN CHARLES KERIN, in pursuance of my powers under Section 7 of the Industry Commission Act 1989, hereby:

1. refer the taxation and financial policies of governments, including pricing and charging policies, which lead to inefficient patterns of urban settlement in Australia for inquiry and report within fifteen months of the date of receipt of this reference;
2. specify that the Commission identify and assess the impacts of those taxation and financial policies of State, Territory and local governments and of the Commonwealth Government, which directly or indirectly reduce the efficiency of land use in urban areas, including use for housing;
3. request that the Commission make recommendations on courses of action available to governments to ensure that financial and taxation policies promote more efficient patterns of urban land use in Australia, including, where appropriate, containment of the outward growth of cities;
4. specify that the Commission is to take account of economic, social and environmental objectives of governments affecting urban planning and development and also take account of recent substantive studies undertaken elsewhere;
5. request that the Commission give particular consideration to the options for revision of pricing and charging policies to reflect the full capital and recurrent cost of new and replacement infrastructure including the following factors and their inter-relationships:
 - (a) costs of providing physical infrastructure;
 - (b) costs of providing social services infrastructure;
 - (c) costs which fall on third parties (eg increased pollution, congestion and private transport costs);
6. specify that in reporting on these measures, the Commission should identify and assess the impact of differences in current pricing and charging policies and rates of cost recovery, including implications for the provision of infrastructure in particular States/Territories and capitals, and issues relating to subsidies which have been provided by the Commonwealth;
7. request that the Commission report on options to change pricing and charging policies to improve efficient utilisation of existing infrastructure;
8. request that the Commission report on the implications of the tax and financial policies of governments on the private provision of infrastructure at household level; and
9. request that the Commission report on and assess the direct and indirect negative equity impacts of current and proposed pricing and charging policies, particularly on housing affordability. The Commission is requested to provide options for consideration by governments to address such identifiable equity impacts.

John Kerin
21 November 1991

OVERVIEW

Since the earliest days of European settlement, Australia has been a highly urbanised society. Its patterns of urban settlement have been shaped by an accumulation of cultural, geographic, economic and policy influences. Typically, Australian cities have developed at comparatively low densities, and now cover large land areas. They can change or be changed only slowly.

Concerns about the social, environmental and other effects of urban expansion have focused attention in recent years on the nature of city growth and the efficiency with which it is being managed. There are also concerns about the ability of public providers of urban services infrastructure to obtain the resources needed to meet increasing demands for new and replacement infrastructure.

These matters were considered by a governmental Working Group on Patterns of Urban Settlement, which reported to the special Premiers' Conference in July 1991. Subsequently, the Commonwealth and State governments asked the Commission to:

- identify and assess the impact of taxation and financial policies of governments at all levels which reduce the efficiency of land use in urban areas; and
- consider the options for revising pricing and charging policies for urban infrastructure (such as water, sewerage and roads).

Efficiency in urban land use

In responding to this reference, a threshold question concerns the meaning of 'efficiency' in relation to urban land use. This depends on a balance being struck between community preferences for different ways of using land (including the density and location of housing) and the costs involved (including pollution and congestion). Given the complexity of this interaction, it is impossible to be prescriptive about what an efficient city should look like. What can be identified are the preconditions for achieving efficient patterns of urban settlement. Among the more important of them are:

- all the *costs* – environmental, social and financial – that are incurred in providing and using urban services which form the framework of an urban settlement should be assessed and accounted for in making decisions about it; in practice, this means that urban infrastructure decisions should be made with real and full knowledge of what costs are likely to be incurred, and of the attitudes of users towards paying for them;

- *prices* for urban infrastructure services and the supply of serviced land for housing should reflect accurately the costs incurred in their provision; they should not be distorted by taxes, subsidies, or other measures; and
- land use within urban settlements, and the regulations which help shape it, should be able to respond *flexibly* over time to changing needs of the community.

The Commission has found a range of policies and practices which prevent these conditions for efficiency in settlement patterns from being satisfied. Concerns about the outcomes have led to this inquiry; debates about the remedies have flourished.

Urban consolidation

A general response, common to all levels of government, has been to attempt to raise the level of use of existing and new infrastructure by encouraging or mandating increased density of cities, through infill and higher density housing developments. Various forms of surplus infrastructure capacity have been observed in inner city areas, as average household size has fallen and people have moved to the outer areas where new services have had to be provided for them.

In assessing the net social benefits from policies to promote consolidation, there is a need to consider not only direct infrastructure costs, but also environmental or other external effects, and the preferences of Australian communities. This constitutes a complex equation.

Infrastructure costs

Putting aside environmental and other external costs, the infrastructure costs (including cash outlays) of infill development relative to development at the fringe are importantly influenced by the extent and nature of available excess capacity in urban facilities and services. In some cases capacity appears abundant. In other cases, while there may be excess capacity in some services – say, water or sewerage – there may not be in others – say, stormwater or road capacity. Where there are capacity constraints in some services, additional costs of replacing or augmenting infrastructure need to be weighed against the savings from greater utilisation of other infrastructure. The whole range of infrastructure services needs to be taken into account. An obstacle to appropriate decision-making is that existing information about the extent of urban services capacity is poor.

There are savings in infrastructure outlays per dwelling associated with increases in density of housing developments in most locations, although the

available evidence varies on their significance, and third party costs are not usually included in the studies.

'External' costs and benefits

The importance of environmental and other side effects of urban settlement depends on the particular characteristics of the locations and projects in question. For each of the main environmental components – air and water quality and urban land amenity – there are potential costs as well as benefits. In some cases the costs are unpredictable, because they depend upon the behaviour of those people who decide to live there. For example, the extent of automobile side effects such as congestion and air pollution arising from settlement in a particular location depends, among other influences, on the location of employment and the availability of, and preferences for, public transport.

Accounting for people's preferences

This leads to consideration of what people prefer – the demand side of the cost-benefit equation – which most empirical evaluations of consolidation neglect. The Commission's inquiry has identified some taxation and other distortions favouring investment in dwellings. But it has also affirmed that many Australians *like* living space – not just in their houses but also around them. Empirical work suggests that demand for houses instead of flats, and for more land instead of less, is not highly sensitive to price. That may be illustrated by the fact that most house blocks being marketed, while considerably smaller than the 'quarter acre' of urban folklore (and apparently declining over time), remain significantly larger than the minimum size permitted under zoning regulations.

This means that policy changes which constrain choice about living densities may have an adverse impact on community welfare, which should be weighed against any social gain from savings in resources. A further implication is that local community resistance to rezoning and other proposals to increase density may not be just a manifestation of 'not-in-my-backyard' attitudes impeding the public interest, but rather a more fundamental reflection of what the wider community values.

Aside from the above considerations about costs and benefits of consolidation policies, there is also a question about their scope to limit urban sprawl. Not much land area can be saved just by a move to medium density dwellings in new developments, given the relatively small share of the total urban area that dwellings occupy. A substantial impact would require the replacement of existing housing or the reduction of non-housing space, such as roads, green space and other major land uses. While technically feasible, this is not costless: it may reduce the amenity value of the city to residents and require replacement infrastructure.

To achieve an efficient pattern of urban settlement it is important that all impediments to informed choices about appropriate dwelling sizes, densities and locations – based on the full costs – be minimised.

Is urban sprawl subsidised?

It is commonly believed that subsidisation of urban services in outer areas of cities is encouraging inefficient settlement patterns and excessive urban sprawl. Developers have argued the opposite. The issue is central to this inquiry, and the Commission sought to establish whether there really is a subsidy of significance, and whether its removal would make much difference to where people decide to live.

The costs of providing and maintaining the range of infrastructure services vary considerably by location, but despite some reforms in recent years, especially in water, sewerage and drainage ('hydraulics'), pricing and charging practices do not yet adequately reflect such differences. In particular:

- where developer charges for off-site infrastructure apply, they are often set at a uniform level, without regard to local cost variation;
- access and user charges tend to be either fixed for all users, regardless of location, or based on property values – which have no necessary relationship to costs of service provision.

Charges have often been modified to meet social objectives and budgetary constraints; efficiency considerations are not always paramount.

Estimating cost recovery

In seeking to determine the extent to which there is under- or over-recovery of costs as a result of current charging practices for urban services, the Commission found that existing studies were deficient in their coverage of relevant costs and revenue. Data is often poor and sometimes simply not available. Such information as is available reveals a number of areas in which prices and costs of infrastructure services are not well matched. But the evidence is much less clear about the extent to which this favours development at city fringes.

In the case of *hydraulics* services, which are an important component of economic infrastructure costs, analysis of data provided for Melbourne and Sydney yielded more estimates of under-charging than of over-charging domestic users. But under-charging is apparent among residential areas throughout the cities. Only in Melbourne is there an appreciable difference in favour of the urban fringe. The magnitude of the estimates is insufficient – given margins for error – to conclude there is a significant inducement to fringe location in either city.

Transport infrastructure is also important, but the Commission was unable to obtain the data needed for a comparable analysis to that undertaken for hydraulics. It is nevertheless apparent that there is under recovery of the attributable costs of roads outside particular subdivisions. While this is likely to favour urban fringe settlement, the differential impacts on pollution and congestion of locating at the fringe as opposed to established areas are unclear. In the case of *public transport*, while the rate of subsidy is typically higher for longer journeys, which should favour residents of outer suburbs, the incidence of subsidies across the city also depends on households' use of public transport, which is generally higher in inner areas, where there are typically more services provided.

Nevertheless, if transport infrastructure is generally subsidised (apart from the existence of any differential subsidies), this would in itself favour travel, and thus the dispersal of settlement patterns – in the same way that the declining costs of private travel have done. Even here a question remains about the extent to which car owners are 'paying their way' in aggregate, given the magnitude of petrol and other vehicle taxes.

In the case of *energy*, while there appears to be very little locational variation in charges for the supply and use of electricity and gas, the extent to which costs (and thus subsidies) differ between established areas and the urban fringe cannot be assessed from available information.

The cost of *social infrastructure* generally looms large. Those studies which have identified large subsidies to the urban fringe have usually included the entire cost, where it is not charged for. But social infrastructure is subsidised throughout the city, so the relevant question in relation to patterns of urban settlement is again about the extent to which subsidies at the fringe differ from those in established areas. The true location subsidy component is limited to any direct cost differences – which are unlikely to be systematic or very significant – and the extent of *genuine* excess capacity in alternative development areas. Much of what is claimed to be excess capacity has alternative uses.

In sum, for some important categories of infrastructure, the Commission's analysis has not confirmed the large incentives to fringe location that it had expected to find on the basis of existing claims. Differences with other studies may reflect the Commission's focus on *differential* subsidies and, in the detailed study of hydraulics, the inclusion of costs and charges over time that are often omitted from other studies. The Commission's analysis also suggests that moves towards cost-based pricing, at least in some key areas, are unlikely to change substantially the cost of serviced land at the fringe relative to that in established areas.

This assessment of current practices need not be indicative of what has happened in the past. Nor does it mean that further reforms would not be worthwhile:

- averages can hide significant variation in costs – in many cities, fringe areas differ in their terrain and distance from headworks; inner redevelopment areas differ in the extent and quality of existing infrastructure capacity;
- while the Commission’s empirical work suggests that the consumption of urban land in aggregate would not be very responsive to changes in charges, this need not preclude significant changes occurring in the *pattern* of land use within cities, as additional modelling has illustrated; and
- pricing reforms which relate charges for urban services in different areas to local costs of providing them, will achieve greater efficiency in investment decisions (as well as in the use of services), and more variety in infrastructure provision to suit the needs of different forms and densities of urban development.

Other sources of bias in urban choices

Apart from the influence of infrastructure pricing on location decisions, there is a range of taxation and other influences which affect – and often distort – peoples’ decisions about where and how to live.

Some taxes reduce land-use efficiency

Of particular significance are stamp duties on real estate dealings, which are a disincentive to owner-occupiers changing dwellings as their needs change. They are a tax on mobility. They reduce the affordability of housing, despite the exemptions and concessions commonly afforded first home buyers.

Capital gains taxation treatment of the family home and the non-taxation of rents attributable to owner-occupation encourage greater investment in housing and larger land holdings for dwellings than would otherwise occur, and so distort the pattern of urban settlement.

Choice is further distorted by land taxes. Rental housing is generally taxed while owner-occupied housing is not, and much rural and government land is exempt. In principle, a tax on land, applied universally at the same rate, would be less distorting in relation to housing and location decisions than other taxes. But the present structure of land taxes is distorting because of the various exemptions and concessions given.

Local council rates and some special purpose levies and metropolitan taxes have much the same characteristics as land taxes, in that they too are based on

land values. They also fail to encourage efficiency in land use, because they encompass a wide range of concessions.

As a general rule, the Commission favours neutrality in all the taxes and charges which affect land use and the provision and use of urban services.

Commonwealth-State financial arrangements

Australia's system of fiscal equalisation among and within the States may be viewed as subsidising high-cost locations. The effect *within* cities is of particular interest to this inquiry. While it appears that in the case of grants to local government, more funding per capita generally goes to the expanding areas, including the fringes of cities, it is not clear that this has been a significant inducement to expansion, given the magnitude of the funding and the many other influences at work. When grants compensate States or local councils which provide urban services in high cost locations, they obscure the relative costs of settlement in those locations and can distort the basis of efficient decision-making. Any review of the criteria under which the Commonwealth Grants Commission operates should address this issue.

Building costs

As density rises, there are often savings to be made per dwelling in capital outlays on urban services. At the same time, for a number of reasons, higher density construction is more costly than that for single dwellings. There are indications that applying commercial site employment conditions to medium density building sites may impose additional costs as well as deterring smaller-scale builders from venturing into medium density developments. If so, this would reinforce the continuation of emphasis on detached cottages, and reduce the options available to home buyers.

Transport regulation

The provision of urban transport is constrained by a web of regulation. It includes monopoly route allocation for buses, and restriction of entry to the taxi industry. Because so much of the travel undertaken at the urban fringe requires route flexibility, this kind of restriction may disadvantage those who live in fringe settlements, as well as leading to increased private car ownership and use.

Environmental effects

For any pattern of urban settlement, there are potential costs and benefits associated with the main environmental components of air, water, and land. Amenity implications are also important when noise, congestion, and similar accompaniments to urban settlement impinge on activity. They can have major

consequences for location decisions, and are quickly incorporated into land values.

The logic of accounting for these kinds of environmental resource costs is the same as it is for other scarce resources: in principle they should be incorporated in decisions about what people purchase, in what combinations, and where. In practice, this is not always feasible.

Some progress is being made, although the results are mixed. The costs of preventing or reducing water pollution are increasingly being incorporated into location-specific developer charges. More commonly, revenues to fund programs intended to reduce or remedy environmental problems are raised through higher usage charges, or by one-off levies which are uniform across cities. Mitigation strategies for air pollution are difficult because of its mobility. Location-specific approaches may help in some cases, but more general charging and regulatory regimes may be needed where 'migratory' pollution is a problem.

The environmental effects of different forms of urban fringe development, or of further inner-city redevelopment, are difficult to define, and are very city- (and location-) specific. For example, while Sydney faces severe water pollution problems with the Nepean-Hawkesbury river system for fringe developments, urban infill may mean bigger stormwater runoff problems in some areas, which can also be difficult and expensive to control.

It is not practical or cost effective to attempt to control urban land use such that no pollution or other adverse environmental impacts occur. Simple solutions are scarce: for example, mandated reduction in use of private motor vehicles is often advocated to remedy air pollution and congestion, but this would imply an extreme judgement about alternative means of achieving those objectives, and neglect the considerable range of benefits to households and firms of the mobility enabled by private vehicles. Alternatives – including the use of technological means to facilitate pricing for congestion, and deregulation of public motor transport – could provide more acceptable outcomes at lower cost.

What is clear is that environmental impacts will generally be exacerbated when infrastructure charging is insufficient to recover even direct financial costs. Better locational differentiation in user charges will facilitate the incorporation of residual environmental costs of urban settlement as techniques for environmental management improve.

Affordability and equity

An apparent dilemma facing governments is the need to promote efficiency (and relieve fiscal stress) through user pays policies for publicly provided infrastructure, while keeping accommodation 'affordable' and 'accessible' to

those on lower incomes. There is apprehension that reforms of charges and taxation may lead to unacceptable escalation in housing prices.

For the reforms advocated in this report, there do not appear to be grounds for these concerns. Existing location subsidies which might be removed do not appear to be large on average relative to typical household expenditures. In fact, interest rates are likely to play a much larger role in determining affordability of housing than the pricing reforms involved.

Consideration of only the initial effects of higher charges may overstate the ultimate impact on ‘affordability’ – which relates total housing costs to disposable income. Over time, increased utility revenue, or redistribution of its sources, may allow reductions in some existing charges, and in other taxes.

The Commission favours charges that convey information about the costs of supplying different locations. In some cases, up front (developer) charges will be appropriate; in others, properly-specified access charges will be preferred. In principle the *timing* of charges should make little difference to affordability; in practice it may, because of mechanical lending rules used by banks, the uncertainty created by the potential for public authorities to alter future charges, and government guarantees on the borrowings of public authorities (which can serve to distort the allocation of capital).

Effective equity

The Commission considers that requiring people to pay the full costs of their call on resources for urban services need not be inconsistent with equity objectives. Indeed, it sees utility pricing as an inappropriate mechanism for meeting income distributional objectives. Not only does such an approach lack transparency, it is not effective. For example, any undercharging at the fringe (by overcharging inner areas and/or the business sector) need not redistribute income from richer to poorer members of society, or even to first home buyers – since both rich and poor, first homebuyers and repeat buyers, live at the fringe. It is *random* redistribution.

Much of the debate about whether inner area residents have themselves paid for infrastructure provided in the distant past, fails to recognise that past advantages (and disadvantages) tend to be capitalised into the value of land and ‘paid for’ when it changes hands. Bygones are bygones in property markets.

Government as land developer

The extent and nature of Government participation in land banking and land development varies among States, but has usually been based partly on equity objectives. To the extent that lower prices have been achieved by the privileged access to taxation and other concessions of the agencies concerned, there is a question as to whether private companies, similarly subsidised, might have

achieved the same result. First-comers are usually the ones to benefit from this activity; the gains are then capitalised in property values. There is little relationship to any definable needy group, since the benefit goes to those capable of raising a deposit for, and meeting the costs of, ownership.

Land price stabilisation has been another major objective of direct government participation in the land market. With the possible exception of Adelaide, it is not clear that this involvement has had a significant impact on prices generally. Short-term instability in urban land markets appears to be endemic in Australia. (It may be accentuated by macroeconomic policies.) What is apparent is that extensive funds have been employed by government agencies in holding and developing residential and other land, with financial returns to taxpayers' equity which are difficult to ascertain and evaluate.

The Commission has found the arguments for government involvement in these activities unconvincing, but lacks data on their operations. There should be a detailed evaluation of the performance of the relevant agencies.

More generally, the Commission found no basis on which particular localities should be subsidised for welfare and equity purposes, whether directly or through the structure of charges for urban services. When such objectives are pursued, the most effective method is to direct assistance from general revenues to those people meeting the target specifications; that is, the people should be subsidised, not the places where they are thought to live or work.

Flexibility in land use

Governments influence the pattern of urban development not only through taxation and financial policies, and the provision of infrastructure, but also through planning and regulatory controls over how land may be used. Such a directive role by governments is largely motivated by legitimate concerns about the ability of an unfettered market in urban land to deal adequately with incompatible land uses and environmental effects, as well as a perceived need to coordinate development.

Once in place, land use controls can be slow to change. Resident opposition to some types of urban development has utilised the planning mechanisms to protect existing local patterns of settlement. This has been evident in relation to the redevelopment of established areas and can sometimes be quite costly to those involved. However it is not clear how much of an impediment to efficiency it represents. If zoning and development controls are too restrictive or inflexible in the face of market pressures, they will generally be changed, or circumvented.

There have also been a number of State initiatives to provide more flexibility and uniformity across council jurisdictions in how land use may be adapted.

How much further this could or should go, raises some difficult questions about appropriate levels of governance in relation to urban settlement, which are outside the purview of this inquiry. There remains considerable scope, however, for reducing impediments to efficiency within existing frameworks.

Local council control of development and building has created a layer of administration and compliance costs which are resented by some, and unrelated in any case to actual costs of oversight. If local councils were to charge for their supervision of planning and building on a properly costed basis, that would itself generate pressures for improvement in service delivery. Project costings currently have to reflect the diversity of standards adopted by councils; some element of rationalisation of such standards could produce useful cost savings.

The Commission supports moves towards standardising certain development codes such as engineering standards (for example, kerbing and guttering, pipe sizes and the like). However, this should not be used to prevent different standards being set for justifiable, performance-related reasons in different local government areas.

More generally, allowing greater use of individual discretion to meet stated objectives could mean lower costs, and outcomes that are better attuned to preferences. An important move in this direction has been the increased use of performance standards in place of detailed prescriptions, allowing planning objectives to be met with greater flexibility. There may be scope to extend this approach in relation to regulations governing household provision of infrastructure.

Better pricing permits more flexibility

Government control over land release for housing has in part been intended to minimise the public costs of infrastructure by influencing the rate of development. Better pricing by infrastructure providers can perform at least part of this function.

If servicing charges for new developments accurately reflected the costs of provision of urban services (including environmental costs), then ‘out of sequence’ development would only occur where the higher infrastructure costs were matched by a willingness to pay. Depending on the extent of any genuine excess capacity in required (government-funded) social infrastructure at other sites, efficiency in urban land use could be impeded by preventing such developments from going ahead.

In sum, policies for urban settlements need to emphasise flexibility, and to conscript market mechanisms wherever possible. The real issue is not urban consolidation versus fringe development, nor is it low versus medium density housing. It *is* about what people want from their cities, and ensuring that decisions about where and how they live reflect the wider costs and benefits.

SUMMARY OF KEY FINDINGS AND RECOMMENDATIONS

Efficient land use

- The efficiency of urban land use depends both on the costs involved (including social and environmental impacts) and the community's preferences. The complexity of this interaction precludes detailed prescription of what an efficient city should look like.

[chapter A4, section 4.6; chapter B1, section 1.5]

- Government policy would best be directed towards removing locational bias from urban choices. It should not unduly constrain choice.

[chapter A4, section 4.6; chapter B1; chapter B3]

- Information on land use patterns and the area devoted to different land uses within cities is poor and needs to be improved by land use planning and coordination agencies. The cost is likely to be modest.

[chapter A2, section 2.3]

Costs of infrastructure provision

- The costs of infrastructure provision, including environmental side effects, vary greatly among locations in cities.

[chapter B2]

- Infrastructure costs per dwelling generally decline as on-site density of development increases. The extent of cost savings is very site- and service-specific.

[chapter B2]

Efficient charging for urban infrastructure

- Charges should, wherever possible, reflect any significant locational differences in the costs of providing urban infrastructure. Where they cannot do so, they should at least seek to avoid systematic locational bias.

[chapter B3, section 3.4]

- While it is not necessary to charge explicitly for costs that are common to all developments to transmit efficient location incentives within cities, cost recovery is desirable for reasons of efficient resource management and decision making in relation to the provision of new infrastructure.

[chapter B3, section 3.5]

- Because efficiency in pricing has more than one dimension, it will usually be necessary to employ a number of charging instruments simultaneously. Developer charges are well-suited to reflecting variations in costs by location and in some respects may be preferred to periodic access charges for that purpose. Charges for use are probably best matched with marginal costs of supplying the service (including congestion costs, broadly defined).

[chapter B3, section 3.4]

- Where there is genuine excess capacity, it is important that use of it not be discouraged by prices that exceed the costs of supply. New (and existing) users should be charged at levels that ensure that capacity is appropriately used.

[chapter B3, section 3.5]

- Present methods of charging for infrastructure services are often not sufficiently reflective of locational cost differences. There is too much reliance on averaging or uniformity in all forms of charging. In addition:

- property values have no necessary relationship to costs of providing urban services such as water and sewerage, and the practice of using them as a basis for charging should end;

[chapter B4, section 4.7]

- road authorities should be allowed to levy clearly identified charges on developers to cover the costs of providing and improving higher level roads attributable to new developments.

[chapter B4, section 4.3]

- In attempting to assess whether public infrastructure charging encourages expansion of settlement at the urban fringe, the Commission found:

- for most categories of infrastructure, the detailed information needed for a definitive analysis is not available;
- in the one case – hydraulic services – where available data permitted a quantitative assessment for Melbourne and Sydney, the existence of a significant inducement to fringe location was not confirmed;

- in most other cases, when all relevant factors are considered, it is difficult to judge whether net subsidisation of the urban fringe is likely, let alone the magnitudes involved. What is clear is that assessments which do not properly account for subsidies to established urban areas will generally overstate any inducement to fringe location, especially for social infrastructure.

[chapter B4, section 4.7]

- Lack of information is a fundamental obstacle to reform of infrastructure charging and better asset management. Public sector providers of urban services should be required to compile and publish annually the costs, revenues and charging structures associated with development in different areas within their administration. Information is also urgently needed on the value and condition of existing infrastructure throughout the cities.

[chapter B6, sections 6.1 and 6.7]

Impacts of charging reforms

- While the incidence of developer charges and other contributions at any particular time will depend on the characteristics of the market, it is most likely in the longer term that they will fall on purchasers of developed land.

[chapter B5, section 5.1]

- In principle the timing of charges should make little difference to the burden of finance; in practice it may do so because of mechanical lending rules used by banks, the uncertainty created by the potential for public authorities to alter future charges, and government guarantees on the borrowings of public authorities.

[chapter B5, section 5.1]

- Statistical analysis conducted by the Commission suggests that the consumption of urban land in aggregate is not very responsive to changes in its price (and hence to changes in infrastructure charges). However this does not preclude changes occurring in the *pattern* of land use within cities, as illustrated by additional modelling undertaken by the Commission. Eventual impacts would depend upon the flexibility of land use restrictions and adjustment costs.

[chapter B5, section 5.2]

- The mix of people’s income levels, household types and ages in the different parts of major cities suggests that the effects of reforms which led to higher charges would not fall disproportionately on any identifiable community group.

[chapter B5, section 5.3]

- The provision of subsidised urban infrastructure, or concessional charging for it, is not an efficient means of meeting equity objectives. Practical measures to shield deserving categories of people from hardship are better directed to them as people, rather than to the areas where they are thought to live, or to the city-wide networks of urban services they use.

[chapter B5, section 5.3]

- Charges for existing households should be examined as part of any reform of pricing structures. It would be equitable for established residents to at least face charges that matched the cost of replacing infrastructure required to service them.

[chapter B5, section 5.3]

Institutional and regulatory reform

- Undue constraints on the ability of infrastructure providers to differentiate their charges in line with costs should be removed:
 - governments should maintain an arm’s-length relationship with their business enterprises and not seek to direct their general pricing structures away from commercial criteria: community service obligations can and should be identified and fully funded from general government revenues;

[chapter B6, sections 6.7 and 6.8]

- the possibility of using contracts or legislation to govern the provision of services to residents of particular areas in exchange for a set of charges that relates to the capital and recurrent costs of servicing that area only should be examined.

[chapter B6, section 6.2]

- Impediments to public authorities, particularly infrastructure providers, entering into and enforcing contractual arrangements should be removed.

[chapter B6, section 6.5]

- Regulations restricting the provision of urban services on-site by households should be subject to greater public scrutiny, and made more performance-oriented, and less prescriptive.

[chapter B6, section 6.4]

- Urban transport is inhibited by a web of regulation. It includes monopoly route allocation for buses, and restriction of entry to the taxi industry. Because so much of the travel undertaken at the urban fringe requires route flexibility, this kind of restriction constitutes a penalty to fringe settlement as well as leading to increased private car ownership and use.

[chapter B4, section 4.4; chapter B6, section 6.8]

Taxes on housing and land

- Stamp duty on real estate transactions is a disincentive to owner occupiers changing dwellings as their needs change, as well as reducing the affordability of housing.

[chapter C2]

- In principle, a tax on land, applied universally at the same rate, would have little effect on land use. However, current land tax regimes are distorting, because of the various exemptions and concessions given.

[chapter C1, section 1.1]

- The exemption of owner-occupied housing from capital gains taxation, and the non-taxation of rents attributable to owner-occupation, encourage more investment in housing and larger land holdings for dwellings than would otherwise occur.

[chapter C1, section 1.2]

Investment in infrastructure

- Section 51AD and division 16D of the Income Tax Assessment Act are intended to restrict the ability of private providers of infrastructure to obtain tax benefits associated with depreciation of assets under the control of tax-exempt bodies. The criteria for applying these provisions in practice remain unclear and a review is warranted to examine whether more explicit guidance could be given.

[chapter C3, section 3.1]

Fiscal equalisation and the Commonwealth Grants Commission

- It is not clear if Australia's system of fiscal equalisation is a significant influence on the pattern of settlement *within* cities, given the many other influences at work.

[chapter C4]

- Fiscal equalisation among and within the States provides the capacity to subsidise high cost locations. When grants compensate States or local

councils which provide urban services to high cost locations, they obscure the relative costs of settlement in those locations and can distort the basis of efficient decision-making. Any review of Commonwealth Grants Commission criteria should address this issue.

[chapter C4]

Local government

- Using unimproved capital values as a rates base has the advantage that it does not unduly discourage site development.

[chapter C5, section 5.3]

- Local governments should be:
 - encouraged to make greater use of specific charges for services where the user can be separately identified. Charges should be set on the principle that those who generate costs, or benefit from council services, should be required to pay for them;

[chapter C5, section 5.4]

- given greater scope for applying differential rates – irrespective of the rates base they use – so that they may make more use of selected targeting of charges.

[chapter C5, section 5.4]

- State and local governments should undertake a critical review of the reasons why rates exemptions or concessions are accorded to particular groups, and the effects that such policies have. This review should start with the presumption that all land should be rateable. In those cases where it can be shown that this would cause undue difficulties, concessions could be phased out over several years.

[chapter C5, section 5.5]

- Charging processes for development control are in need of reform. Councils should be free to set their own charges for services provided in the development control area, based on the costs incurred. In this way, developers and councils can more clearly ascertain what they are getting for services rendered and required.

[chapter D3, section 3.2]

Government participation in land markets

- The Commission sees little potential for government land agencies to reduce the instability of land markets or to provide land at prices significantly below those which would prevail had the development been in private hands and subject to the same taxation treatment.

[chapter D2]

- Interfering directly in the workings of the land market is an ineffective means of achieving social welfare objectives and provides no guarantee that target groups will be the main beneficiaries.

[chapter D2, section 2.3]

- Much capital is tied up with the activities of government land developers. It is difficult to obtain a clear understanding of what performance criteria are used, and whether they are met.

[chapter D2, section 2.2]

- The Commission recommends that all State or Territory governments which are engaged in land banking or other land development activities establish reviews to:

- determine, and publicly specify, which social objectives they seek to achieve;
- identify the nature and extent of the concessions that agencies receive through taxation and other means;
- assess and make public the rates of return on capital invested on the community's behalf; and
- evaluate alternative options by which government objectives might be met.

[chapter D2, section 2.6]

- If direct government involvement in land markets is to continue, detailed performance criteria should be specified for the relevant agencies. These should include valuation methodologies for land assets, and the calculation of rates of return on assets. Procedures (including land sales mechanisms) should be fully transparent, with provision for regular review of the impact of such activities on the groups identified as needing assistance.

[chapter D2, section 2.6]

The housing construction industry

- There are indications that applying commercial site employment conditions to medium-density building sites may add to costs as well as deterring smaller-scale builders from venturing into medium-density developments. This would reinforce the continuation of emphasis on detached cottages, and reduce the options available to home buyers.

[chapter D4]

INTRODUCTION

Most Australians live in cities. It follows that the nature of urban environments and how they develop are important determinants of community standards of living – including ‘quality of life’.

Australians have traditionally been fortunate in their living standards, and the quality of their urban lifestyles, compared with the inhabitants of many other countries. This is reflected in the substantial immigration since the war. As Australian cities have grown, however, concerns have emerged about some of the costs that this has entailed and about adverse social and environmental consequences. In the jargon of the times, the ‘sustainability’ of traditional approaches to urban development is being questioned.

Background to the inquiry

At the 1990 special Premiers’ Conference, a Working Group was asked to report back on ‘ways to improve the efficiency and equity of Australian urban settlement.’ The *Report of the Working Group on Patterns of Urban Settlement* was presented to the 1991 special Premiers’ Conference. It argued that:

Current use of land and infrastructure cannot be afforded on economic, social or environmental grounds ...

It also noted that the best use of infrastructure in Australia is hindered by the low density structure of Australian cities and as a result:

Australia’s pattern of low density development has become increasingly inefficient and inequitable.

The Working Group put forward three broad strategies to improve the efficiency and equity of urban settlement:

- promotion, planning and support of urban consolidation by all spheres of government;
- the application of more efficient and equitable approaches to the provision, financing and charging of urban infrastructure; and
- improvement of government mechanisms for the planning and coordination of urban development.

It further recommended that Heads of Governments commission some more

detailed studies, noting in particular the following topic for the Industry Commission:

Urban Consolidation versus Urban Sprawl: Examine taxation and financial policies – including pricing policies - administered by all levels of Government, which result in the direct or indirect promotion of urban sprawl development or which inhibit consolidation.

The report was considered at the July 1991 special Premiers' Conference, which agreed that urban consolidation should be promoted. The Conference further resolved that an intergovernmental approach should be adopted to achieve more efficient and equitable urban infrastructure, and that government mechanisms for the planning and coordination of urban development should be improved.

The Conference agreed that the Industry Commission should be asked to examine the taxation and financial policies of governments, including pricing policies, which lead to inefficient patterns of urban settlement in Australia. The Commonwealth Government forwarded a reference to the Commission in November 1991. The terms of reference, shown at the front of this report, are long and detailed, but broadly the Commission was asked to:

- identify and assess the impact of taxation and financial policies of Commonwealth, State/Territory and local governments which reduce the efficiency of land use in urban areas; and
- consider the options for revising pricing and charging policies for urban infrastructure (water, sewerage, roads and the like).

The inquiry process

The Commission came to this inquiry with information gained from a number of other inquiries into public infrastructure issues. It has completed separate inquiries into *Water Resources and Waste Disposal* (IC 1992), *Rail Transport* (IC 1991) and *Energy Generation and Distribution* (IC 1991). However, emphasis on the link between public infrastructure and patterns of urban settlement is new.

The Commission also drew on the knowledge and data provided by participants – gained through extensive visits, as well as a formal round of initial public hearings and a second round after a draft of this report had been released. Some 166 submissions were received, of which 62 were presented at public hearings. They cover the views of a range of representatives from industry, government (at all levels), public enterprises and community groups (see appendix A). The information and views provided were of considerable assistance to the Commission, and it is grateful to all who have taken part in the inquiry.

In evaluating this material, and responding to its terms of reference, the Commission must also meet the requirements of the *Industry Commission Act 1989*, which direct the Commission to adopt a broad perspective, taking into account the interests of the wider community.

Some key issues

Australian cities have evolved in response to a range of factors:

- their individual topographies;
- historical and cultural influences;
- demographic changes;
- government regulations, controls and plans;
- the manner and extent of infrastructure provision, and
- the lifestyle preferences of their residents.

It is difficult to assess the effects of any of these influences in isolation.

If the main focus of the current debate about Australian cities had to be encapsulated in a single slogan, then that would be ‘consolidation vs sprawl’. As noted, this was the context for the Working Group proposal for a study by the Industry Commission on public infrastructure. The terms of reference that were sent to the Commission provided a broader objective – ‘efficient’ land use. A basic task for the Commission has been to interpret what this means.

Many participants clearly regard the prevailing pattern of settlement in Australian cities as inefficient. Some see low density as not only costly to service, but as inequitable and environmentally damaging. Their vision of an efficient city is clearly a more compact one, with smaller lot sizes and more multi-dwelling developments. Some also advocate a much diminished role for the motor car and a commensurately greater role for public transport.

Other participants have expressed contrary views. Some see the low density of Australian cities as a desirable feature, reflecting rational lifestyle preferences in a relatively affluent society, with access to the convenience and flexibility afforded by private motor vehicles.

It would be wrong, however, to characterise the debate only as involving polar extremes. Many participants share a concern that cities do have problems and that changes are needed to allow them to develop in ways which minimise wastage of resources and maximise the benefits to inhabitants. From the Commission’s perspective this is also a reasonable, if broad, approach to efficiency in an urban context.

In meeting its terms of reference, the Commission has sought not only to identify taxation and financial impediments to efficient land use, but also to evaluate their significance and assess their likely impact on patterns of urban settlement. This is not a straightforward task, because of the many influences on patterns of settlement, and the complexity of their inter-relationships. While quantitative analysis and modelling can help, they have more limitations than usual in an urban context. A basic obstacle to analysis is lack of data.

Governments can influence the pattern of urban settlement not only through taxation and financial policies, and the provision of infrastructure. They can also do so through planning and regulatory controls over how land may be used, and through their own participation as holders and developers of land. These regulatory arrangements can have an important bearing on the adaptability of a city to changes in the needs of its inhabitants, as well as to changes in relevant taxes and charges, and the Commission has therefore given some consideration to them.

A guide to the report

This report is in two volumes; the body of the report in volume 1 contains four parts.

Volume 1 (the report)

Part A provides information which puts the analysis in the remainder of the report into context. It reviews relevant urban settlement data, highlighting the lack of foundation for some widely-held notions about where different groups of people live and work. It also looks at government policy objectives bearing on urban development, including efficiency, equity and better environmental outcomes.

Part B considers the key question of the provision and pricing of urban facilities and services. It examines existing arrangements for economic and social infrastructure, and summarises some information about the costs involved, and who bears those costs. It addresses a question of concern to many: is fringe development subsidised by people living in established suburbs? It also suggests ways in which better pricing rules should lead to better locational decisions, and their equity and efficiency implications.

Part C examines some forms of taxation which can bias people's decisions about where and how to live, including land taxes, and stamp duty on real property. It also looks at the role of Commonwealth-State financial relations, focusing on fiscal equalisation and local government rates.

Land development processes are considered in part D. It briefly assesses the roles of government land developers, and reports on some regulatory issues,

including those relating to development control, and the residential construction sector.

Volume 2 (the appendices)

Supporting material, including more detailed reporting of econometric and modelling work, and an overview of environmental issues as they affect urban settlement, is located in the appendices.

PART A

**AUSTRALIA'S PATTERN
OF URBAN SETTLEMENT**

PART A: AUSTRALIA'S PATTERN OF URBAN SETTLEMENT

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PART A: AUSTRALIA'S PATTERN OF URBAN SETTLEMENT

The history of European settlement in Australia is the history of an urbanised society. Most Australians live in cities, and most live in cities near the coast. Their urban lifestyles reflect many historical, cultural, geographic, economic and social factors. This section of the report looks at some key aspects of Australia's urban environment – its historical background, the influences of demography, the ways in which we live and travel and the policy objectives of governments.

Chapter A1 considers the early historical factors which have affected the development of Australian cities. Early development of the colony was based on a predominantly convict settlement with strong central control. The staple exports of primary products such as wool and meat with their relatively low labour requirements in the early years also reinforced the domination of the major cities. The gold rush of the 1850s and the following boom period from 1860 to 1890 resulted in much investment in 'city building' which reinforced the role of government in the provision of infrastructure, the legacy of which remains today.

Chapters A2 and A3 are intended to provide a statistical 'broad-brush' overview of the way in which Australians live in their cities. The analysis is more illustrative than definitive and, while providing a context for other parts of the report, is not fundamental to the arguments pursued.

In chapter A2, the extent of urbanisation in Australia is examined and some international comparisons drawn, which show Australia as one of the world's most highly urbanised societies. It also looks at some of the demographic factors which can influence urban settlement patterns.

Some common perceptions about Australian living patterns are examined in chapter A3. Perceptions about where people choose to live and work, the size of their urban blocks, and their travel habits are not always soundly based.

Governments at all levels have considerable involvement in Australian cities. They have many objectives which they try to meet, including those relating to economic, social and environmental policies, and these are considered in chapter A4. Not all objectives are compatible, and it is inevitable that some will be in conflict.

A1 EARLY HISTORY

The outstanding characteristic of Australian economic history was ... the exceptional rate of urbanisation ... The process of urbanisation is the central feature of Australian history ... creating a fundamental contrast with the economic development of other 'new' countries.

N.G. Butlin, in a major study of Australia's economic development from 1861 to 1890 (Butlin 1964, p. 6).

Australia has been, since the earliest decades of European settlement, a highly urbanised society. Its pattern of urban settlement has been shaped by many historical, geographical, economic and social factors, not the least of which has been the nature of the societies from which the early settlers came. The reasons for the siting of each State capital included topography, access to fresh drinking water and suitable anchorage. Those initial settlements became, and remained, dominant urban centres for their regions.

Australia's early colonial history was heavily influenced by its beginnings as a convict settlement, and by the need to grow food in an unfamiliar environment. The colony was funded from London, and decision-making was centralised. Initial growth came from government expenditures. While the flow of convicts increased the labour force, it also added to the need to expand agricultural production. The activities of the Commissariat (or government store) as the dominant purchaser of farm produce (and as a provider of capital advances to farmers) significantly influenced land use in New South Wales during the first few decades.

Influence of early staple exports

The dependence of the colonies on imports, the export orientation of their emerging staple commodities, and the importance of coastal shipping in linking settlements led to early development of towns adjacent to ports.

The domination of wool in Australia's economic life began early, and was interrupted only by the gold rushes. Important characteristics of the pastoral industry were its spatial dispersion, its extensive use of land, and its small demand for labour per unit of output. However, as most wool was exported, the industry required transport to ports from where it would be shipped, and some city-based financial, commercial and marketing services. The lack of regional linkage effects encouraged the concentration of the urban population into a few port cities and discouraged the emergence of large inland towns. As the House of

Representatives report (1992) on *Patterns of Urban Settlement: Consolidating the Future?* noted:

The paradoxical consequence was that the cities grew faster than the bush as pastoral production expanded (p. 8).

This was also a consequence of gold mining. Moreover, once the more readily-mined alluvial gold had been depleted, many miners departed for urban areas, as there were few alternative employment opportunities in the goldfield regions to provide ongoing work.

Population movements

By 1851, just prior to the gold rushes, Australia had a European population of about 400 000, of whom about 54 000 lived in Sydney and about 29 000 in Melbourne. Between them, Sydney, Melbourne and Adelaide accounted for about 25 per cent of total Australian population, or about 29 per cent of the total mainland population (Jackson 1977, p. 98). The concentration of Australia's population into a few urban areas began early.

In 1851, agriculture and pastoral activities employed about 40 to 45 per cent of the workforce, compared with about 60 to 65 per cent in the United States at the same time (Jackson 1977, p. 107).

The gold rush of the 1850s had a major effect on population and economic development. The total population almost tripled within ten years – from about 400 000 to about 1.1 million. The impact on the cities was dramatic. Almost overnight, Melbourne became Australia's largest city, and in 1861 was 50 per cent larger than Sydney – whereas in 1851 it was half as big. Most of this growth came from immigration, and most immigrants stayed in Australia after the goldfields had declined.

Indeed, immigration was a major source of population growth for much of the nineteenth century, comprising 75 per cent of population growth for the period from 1788 to the end of the 1850s gold rush (Borrie 1975, p. 94). The first port of call was one of the major capital city ports, where many immigrants, especially those from urban backgrounds, sought work. There was also a tendency for dependents of those who found work in rural areas to remain in the cities.

During the 1850s and 1860s, wool was displaced by gold as the main export commodity. Notwithstanding the stresses engendered by the gold rushes and the consequent surge in population, the capital cities as a group retained broadly the same proportion of total population over the ensuing decades. Gold mining led to the rapid growth of inland towns in the 1850s and 1860s, but this was a temporary phenomenon. Metropolitan city growth after 1870 outstripped non-city

growth, and the 1880s in particular were years of exceptionally rapid metropolitan concentration and urbanisation. More generally, in the decades leading up to the Great War the 'drift to the cities' was a major social phenomenon.

Moreover, throughout the nineteenth century there was a clear gap between the capital of each colony and the next largest town in the region. As will be seen in the next chapter, this phenomenon has been largely maintained during the twentieth century, with a comparatively high proportion of the population continuing to live in a few major urban centres.

Investment in city-building

In the so-called 'long boom' of 1860-1890 which followed the gold rushes, investment in building and residential construction increased significantly. This was the period of the building of the cities. The investments made were to set the pattern for the continued growth of the major cities in the twentieth century. Butlin said that:

Most of Australian capital equipment went into growing towns, most of the expanding workforce was employed in urban occupations and the greater part of gross product came from urban activity (Butlin 1964, p. 6).

Within the colonies, transport infrastructure reinforced the growth of cities. Early overland transport was expensive, and this may have encouraged urban concentration (Statham 1989, p. 27). When railway systems were developed, they were generally laid out in a radial pattern, focussing on each colony's capital city. In this way the major cities acted as railheads for the hinterland.

A major acceleration of railway building in the 1870s helped consolidate the dominance of capital cities. It reduced costs to industry and increased the benefits of locating in cities.

Australian economic historians have noted that the development of Australian metropolitan areas had some characteristics in common with the development of commercial cities in other newly settled regions. Commercial cities have a different structure from that of traditional or industrial cities, their development influenced by their role as a base from which previously undeveloped hinterland regions were explored and developed. Moreover, in industrial countries the growth of manufacturing in cities was an important cause of urbanisation, but in Australia this was much less important. Indeed:

As early as 1850 many of the characteristic features of Australian urbanisation were already established, whilst manufacturing was still in its infancy (Jackson 1977, p. 105).

Much infrastructure building and development took place in the decades after the gold rushes, and to a large extent this was financed by governments:

... colonial governments became involved with what might be labelled a 'development strategy'. They ... financed the construction of railways, roads, ports, and urban utilities ... Public enterprise was the prevalent form of many utilities, enhancing their scope as agencies of state-directed economic development (Maddock and McLean 1987, p. 11).

Infrastructure provision within cities also influenced the course of subsequent growth. Fixed rail systems and the pattern of road development helped determine the shape of cities. For example, higher density residential areas developed along railway lines, and decisions about the provision of water, sewerage and drainage facilities helped determine growth patterns. Later, as the motor vehicle became the pre-eminent form of urban transport, vacant space between these radial development spurs was filled in with lower density development.

The role of the tariff

City-based manufacturing industries were also encouraged by tariff protection, particularly in Victoria, where it was believed that there was a need to stimulate alternative employment sources for miners leaving the goldfields. Tariffs were levied on interstate, as well as foreign, competition. As part of the agreements under which Federation occurred, tariffs on internal trade were removed and the Commonwealth imposed tariffs on imports. During the early decades of the twentieth century, tariffs were extended by the Commonwealth to protect industries such as steel which had expanded during the Great War. This set the stage for 'protection all round' policies of successive Commonwealth governments which have had an uneven effect on the composition of economic activity in different States and cities. One result was that agricultural and mining activities were taxed, while manufacturing, which is largely city-based, was assisted to expand.

The importance of infrastructure

As noted earlier, a striking feature of Australia's economic history has been the role of governments in the provision of infrastructure. They built water, sewerage and drainage systems, and railways, roads, bridges and telegraph lines, much of it financed by overseas capital. The present shapes of our cities, and indeed some current problems, are in part the legacy of these early decisions.

A2 AUSTRALIA – AN URBAN SOCIETY

Despite images of ‘the wide brown land’ and ‘the sun-bronzed Aussie drover’, Australia is one of the world’s most urbanised countries. Immigration has always been a dominant influence on urban settlement. While households are becoming smaller, homes are becoming larger. Australian cities have a low population density by international standards.

2.1 A nation of city dwellers

The first Commonwealth Year Book, published in 1908, observed:

A feature of the distribution of population in Australia is the tendency to accumulate in the capital cities. To such an extent is this metropolitan aggregation carried, that in every State the population of the capital far outnumbers that of any other town therein, and ranges between 19 and 46 per cent of the entire population of the State ... That this metropolitan concentration is phenomenal, may be readily seen by comparing the percentage on the total population with the similar figures for the principal countries of Europe ... (p. 158).

In 1906, 35 per cent of the Australian population lived in the six State capital cities. The percentage of the population living in these cities (and, subsequently, Canberra and Darwin) increased progressively in the ensuing years until the 1970s, when 64 per cent of the population lived there. Since then the percentage has stabilised (see table 1).

**Table 1: Percentage of Australia’s population living in the State/
Territory capital cities**

<i>Year</i>	<i>1906</i>	<i>1921</i>	<i>1947</i>	<i>1961</i>	<i>1971</i>	<i>1976</i>	<i>1981</i>	<i>1986</i>	<i>1990</i>
%	35	43	51	56	64	64	64	64	64

Source: Calculated from ABS, *Commonwealth Year Books*, various years, and other ABS data.

A similar pattern can be seen in the percentage of the population of each State living in the State capital cities. Between 1947 and 1971 the proportion of people in each State who lived in the capital increased markedly but then stabilised between 1971 and more recent years (see table 2).

Table 2: **Population of capital cities and percentage of State population living in them**

<i>City</i>	<i>1947</i>	<i>Per cent of State pop</i>	<i>1971</i>	<i>Per cent of State pop</i>	<i>1986</i>	<i>Per cent of State pop</i>	<i>1990</i>	<i>Per cent of State pop</i>
Sydney	1 484	50	2 935	64	3 473	63	3 657	63
Melbourne	1 226	60	2 503	72	2 932	70	3 081	70
Brisbane	402	36	870	48	1 196	46	1 302	45
Adelaide	382	59	843	72	1 004	73	1 050	73
Perth	273	54	703	68	1 050	72	1 193	73
Hobart	77	30	143	39	179	40	184	40
Darwin	3	23	39	45	75	48	73	47
Canberra	15	90	159	99	258	100	284	100
Total	3 862	51	8 189	64	10 167	64	10 824	64

Source: ABS, *Commonwealth Year Books*, various years.

Another indicator of the degree of urbanisation in Australia is the concentration of population in cities of 100 000 people or more. In 1990 there were only 13 urban centres with a population of more than 100 000 people but these held 70 per cent of Australia's total population. Table 3 shows the way in which the Australian population was distributed across those cities in that year.

Table 3: **Estimated resident population in capital cities and other major cities ('000), 30 June 1990**

	<i>Number ('000)</i>	<i>% of national population</i>	<i>Cumulative % of national population</i>
Sydney	3 657	21.4	21.4
Melbourne	3 081	18.0	39.4
Brisbane	1 302	7.6	47.0
Adelaide	1 050	6.1	53.1
Perth	1 193	7.0	60.1
Hobart	184	1.1	61.2
Darwin	73	0.4	61.6
Canberra	284	1.7	63.3
Newcastle	429	2.5	65.8
Gold Coast	266	1.6	67.4
Wollongong	238	1.4	68.8
Geelong	151	0.9	69.7
Townsville	114	0.7	70.4
Sunshine Coast	110	0.6	71.0
Other	4 953	29.0	28.8
Total	17 236	100.0	100.0

Source: ABS, *Australian Demographic Statistics*, March and June Quarter, 1991, cat. no. 3101.0.

International comparisons

As noted above, the degree of urbanisation in Australia is high by international standards. Although comparisons are not strictly accurate because of data limitations, table 4 provides some information on the level of urbanisation in some other countries. In general, Australia is as urbanised as the Netherlands, Uruguay and Argentina, and more urbanised than France, Canada, Japan, the Philippines and the Republic of Korea.

Table 4: International comparison of urban population for selected countries (millions)

<i>Country</i>	<i>Total population</i>	<i>Urban population</i>	<i>Urban as % of total</i>
Australia	15.6	13.3	85.4
Uruguay	3.1	2.7	88.8
Argentina	31.9	27.4	85.7
Scotland	5.0	4.4	87.7
Netherlands	14.8	13.2	88.6
France	54.3	39.9	73.4
Canada	25.3	19.4	76.5
Hong Kong	5.4	5.0	93.1
Japan	121.0	92.9	76.7
Philippines	61.4	26.2	42.7
Republic of Korea	42.8	31.6	73.9

Notes: Data is for latest available year. Definitions of urban may vary from country to country.

Source: United Nations 1992.

Another way of comparing urbanisation levels between countries is to look at the number of cities which have a population in excess of 100 000. Table 5 compares Australia, Argentina and Canada as countries with broadly similar populations and geography. It shows that Australia has fewer cities with populations of under one million, but more cities with populations in excess of one million. In other words, Australia's population would seem to be more highly concentrated in its location.

Table 5: **Selected countries with cities of 100 000 or more inhabitants**

<i>Country</i>	<i>Total population</i>	<i>Number of urban areas with inhabitants of</i>			
		<i>100 000 or more</i>	<i>250 000 or more</i>	<i>500 000 or more</i>	<i>1 million or more</i>
Australia	16 833 000	13	8	5	5
Argentina	31 534 000	24	12	7	3
Canada	26 602 000	27	16	10	3

Note: Data is for latest available year.

Source: United Nations 1992, Canada Year Book, 1992.

2.2 Demographic changes

Population growth, the distribution of the population across the nation, external and internal migration patterns and the age structure of the population all have implications for the pattern of urban settlement in Australia. Population growth and its distribution will determine the pressures placed on particular areas for urban development, while housing requirements are greatly affected by life cycle influences: households have different housing desires and needs depending on the age of the householders and factors such as family size.

The Australian population

Preliminary data from the 1991 census shows Australia's population to be about 16.8 million persons. It has increased steadily from about 7.6 million in 1947. While New South Wales and Victoria have remained the most populous States they, along with Tasmania, have lost some of their share of the total population since 1947. Queensland, which lost population share between 1947 and 1971, has subsequently increased it considerably. Western Australia, the Northern Territory and the Australian Capital Territory have all gained an increased share of population over the years (see table 6).

Table 6: State/Territory distribution of, and changes in, Australia's population between 1947 and 1991 ('000 persons)

<i>State/ Ter</i>	<i>Pop 1947</i>	<i>Per cent of Aust pop 1947</i>	<i>Pop 1971</i>	<i>Per cent of Aust pop 1971</i>	<i>Pop 1986</i>	<i>Per cent of Aust pop 1986</i>	<i>Pop 1991</i>	<i>Per cent of Aust pop</i>	<i>Average annual rate of change (per cent) 1947-91</i>
NSW	2 985	39.4	4 726	36.2	5 402	34.6	5 732	34.0	+1.5
Vic	2 055	27.1	3 601	27.6	4 019	25.8	4 244	25.2	+1.7
Qld	1 106	14.6	1 851	14.2	2 587	16.6	2 979	17.7	+2.2
SA	646	8.5	1 200	9.2	1 346	8.6	1 401	8.3	+1.8
WA	503	7.0	1 054	8.1	1 407	9.0	1 586	9.4	+2.7
Tas	257	3.4	398	3.0	436	2.8	453	2.7	+1.4
NT	11	0.1	86	0.7	155	1.0	175	1.0	+5.0
ACT	17	0.2	151	1.2	249	1.6	280	1.7	+6.7
Total	7 579	100	13 067	100.0	15 602	100.0	16 849	100.0	+1.8

Note: Columns may not add due to rounding.

Source: ABS, census data.

The major non-metropolitan trend is the fast growth of new coastal conurbations in northern New South Wales and Queensland. There is also fast growth in particular corridors of major cities. The ten fastest growing regions in Australia at the end of the 1980s (as identified by Coopers and Lybrand) are shown in table 7 below.

Table 7: The ten fastest growing regions in Australia at the end of the 1980s, ranked by net population growth

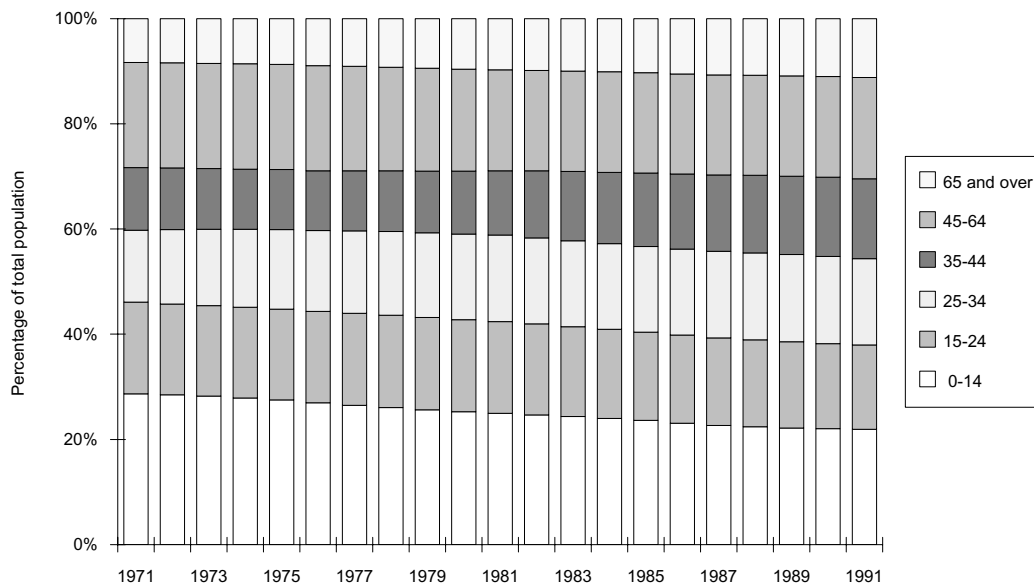
<i>Rank</i>	<i>Region</i>	<i>Population (June 1989)</i>	<i>Net growth (1988-89)</i>	<i>Growth rate (% per annum)</i>
1	Brisbane-Gold Coast	407 039	28 850	7.1
2	Brisbane-Sunshine Coast	286 406	19 979	7.0
3	South Eastern Melbourne	247 119	15 400	6.2
4	Sydney's West	657 050	13 900	2.1
5	Southern Perth	216 041	13 637	6.3
6	Northern Perth	244 880	13 175	5.4
7	Eastern Perth	238 023	9 565	4.0
8	Central Coast NSW	225 200	9 000	4.0
9	Southern Sydney	429 150	6 400	1.5
10	Eastern Brisbane	75 237	5 928	7.9

Source: Coopers and Lybrand Consultants 1990, quoted in NPC 1992.

Age distribution

The average age of Australia's population is gradually increasing and the proportion of older people is rising. Between 1971 and 1991 the proportion of young people (those aged 0-14 years) decreased while the 'baby boomers' increased the proportion of the 35 to 44 age group. The proportion of population aged 65 and older also increased steadily (see figure 1). Median age – the age at which half the population is older and half is younger – has increased from about 27.5 years in 1971 to over 32 years in 1991 (see figure 2).

Figure 1: **Estimated resident population by selected age groups, Australia, 1971 to 1991**

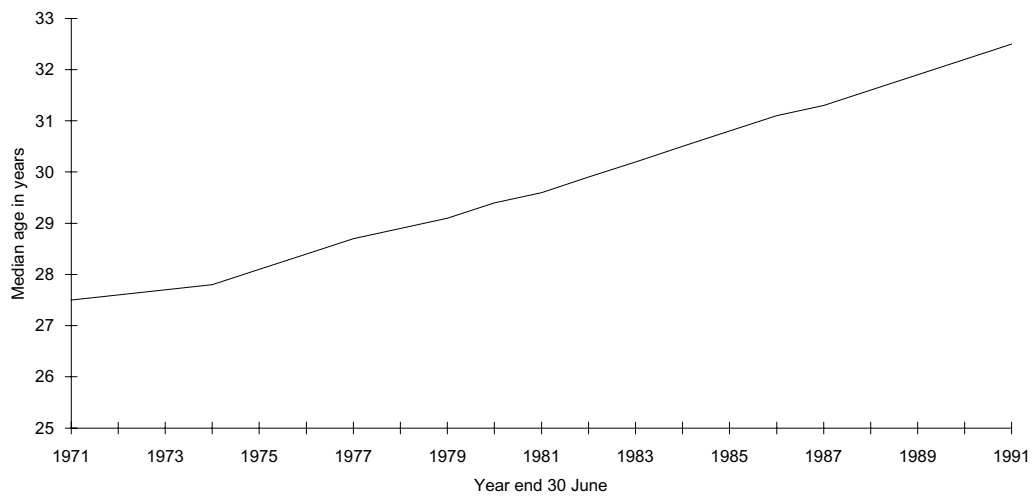


Source: ABS, *Australian Demographic Trends*, cat. nos. 3101.0 and 3201.0., various years.

The implications of age and family size for urban settlement patterns

The ageing population primarily reflects the dominance of the 'baby boom' cohort as it moves through its life cycle, and the contribution of migration to population growth. Both of these factors have implications for the pattern of residential development, one by changing the demand for various types of housing, the other by increasing the overall demand.

Figure 2: Median age of the Australian population



Source: ABS, *Australian Demographic Trends*, cat. no. 3201.0., various years.

The average size of households has fallen from 3.6 persons in 1961 to 2.9 in 1986. By 2006 almost 50 per cent of all income units will consist of childless couples aged over 35 or single persons, compared with around 40 per cent at present. By the same year the population aged 65 years and over is projected to increase by 32 per cent. These changes would have implications for housing patterns because people's need for, and use of, housing changes as their circumstances change (DHHCS, Sub. 85, p. 16).

Kirwan (1991) argued:

... it is not, contrary to many people's belief, the ageing of the population that is going to add proportionately most to the demand for housing but the extraordinary growth in the 'middle aged and childless' group.

Clearly, these are profound changes which have important implications both for the types of housing that will be in demand and for households' discretionary purchasing power (p. 17).

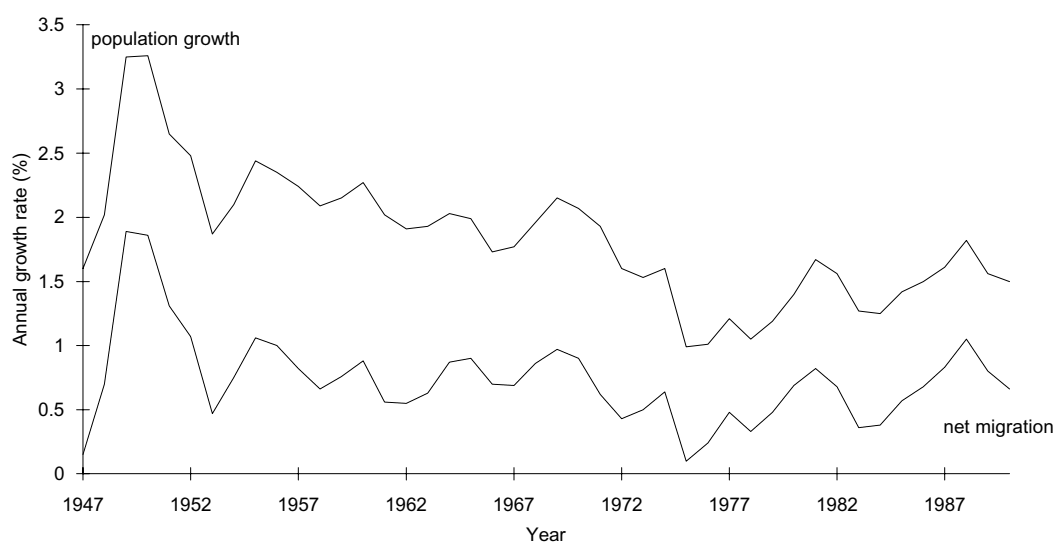
The extent to which people are prepared to change their housing preferences along with changes to family composition is, however, not clear-cut. For example, despite the changes in family structures outlined above, there has not been a corresponding fall in the size of new dwellings in Australia. Indeed, the NHS noted that the average size of new homes has increased by 40 per cent since the early 1970s. Troy said that there are many reasons why individual households may wish to remain in their dwellings even after the size of their households has fallen. These include security, familiarity, stability, freedom of expression,

choice of lifestyle and increasing living standard, and they may be discouraged from moving by the costs of relocation, transaction costs and taxes (Troy 1992, p. 6).

Population size and outlook

Population growth in Australia is greatly influenced by immigration and it has one of the fastest growing populations among OECD countries. Both population growth and immigration reached a peak in the immediate post-war years and have shown a general downward trend since that time. The rate of growth of natural increase has also tended to decline, particularly since the mid-1970s, although there is an indication that it may have begun to increase again since 1987 (see figure 3).

Figure 3: Annual growth rate of net migration and annual growth rate of population, Australia, 1947 to 1990



Source: ABS, *Australian Demographic Trends*, various issues, cat. nos. 3201.0 and 3101.0.

The National Population Council estimated that Australia's population would increase from 17 million in 1990 to 26 million in 2031, assuming net immigration of 125 000 persons per year. Any revisions to immigration rates will alter the estimated increase (NPC 1992, p. 6). The magnitude of Australia's population growth will depend on the level of immigration because fertility is expected to remain below long-term replacement, as it has been since 1977 (Hugo 1991). Nevertheless, even without immigration, the NPC estimated that natural increase would be sufficient to raise the 1990 population of 17 million by

another 2 million over the next 40 years, because Australia still has a relatively young population with comparatively large numbers in or yet to reach the child bearing age groups.

Differences in economic growth and environmental amenity will result in varying rates of population growth across the country. The NPC expects that Queensland and Western Australia will grow faster than other States (NPC 1992, p. 7).

The NPC also expects that movement of people both from internal migration and immigration will continue to favour coastal locations. By 2030, it anticipates that 21 million Australians (assuming continuation of present immigration levels) are likely to reside in the coastal zone.

Growth of Australia's major cities will depend importantly on the level of immigration, since overseas migrants predominantly settle in the five largest cities. Sydney attracts about one third of all migrants, though out-migration is high. Flood (1992) suggests that the general pattern of migration in Australia is for Australians aged between 15 and 24 years and immigrants to move into the cities while all other groups are moving out.

2.3 Urban density

Urban density is usually measured in terms of population density, that is, the number of persons per hectare, although a measure of dwellings per hectare is occasionally used. Given that large parts of urban areas are made up of roads, parks, industrial and commercial areas and other non-residential uses, or are undeveloped, there are several ways in which land area can be defined. The common definitions of density are:

- *gross density*: population divided by gross area, defined as persons per hectare; and
- *net density*: population divided by built-up area, often including only residential land, and sometimes net of public land such as roads, recreation areas, etc.

The CSIRO said that gross density is mostly used as a measure of urban density because it is a better measure of some parameters and fits in better with most modelling approaches. Data deficiencies make net density hard to calculate and the lack of an accepted measure means that comparisons can be difficult.

Forster argued that:

Gross population densities for SLAs [statistical local areas] have little real meaning. Such densities are the result of an unspecified mixture of the proportion of non-urban land in each SLA, the proportion of urban non-residential land, the density of housing and the occupancy rate ... Net densities are – it is true – laborious to calculate, but have much more genuine meaning (Sub. 103, p. 6).

However, the CSIRO observed that:

From a behavioural point of view, in terms of moving decisions, individual perceptions of local amenity will be based on gross density. Private space will of course be measured as net density ... We appreciate of course that net densities are useful for some purposes, eg in calculating whole-city average densities, which can't be done really for gross densities. (Sub. 164, p. 2).

The CSIRO (1992) prepared a series of maps showing urban densities in 1991 and the change since 1976, classified SLAs, for each capital city (except Darwin, which was excluded because of data difficulties).¹ They showed that maximum SLA densities are highest for the largest cities, being 65 persons per hectare in Sydney, 51 in Melbourne, 45 in Brisbane, 27 in Adelaide, 24 in Perth and Canberra, and only 6 in Hobart. Hence, what would be relatively low SLA densities in Sydney would be high densities in some other cities.

The maps also showed that:

The classic pattern for Australian cities is for dispersed suburbs, usually surrounding a pre-automobile or planned core, with a loss of population as the city has expanded from ageing middle ring suburbs towards newer areas. In all major cities except Melbourne, there is evidence of a minor increase in densities in the inner area. As Bell (1981) and Flood (1982) have pointed out, this 'gentrification' gain is due largely to young people under 25 who have moved to the area, often from the country but also from the suburbs, and who have been prepared to live at higher densities in cheap accommodation. Some of this change has been due to redevelopment, and the desire of some members of higher income groups for an urban lifestyle. The major process of Australian urban life however, is the push outwards to newer, larger housing in new suburbs (CSIRO 1992, p. 4).

Land use patterns

The House of Representatives (1992) said that housing only occupies about 30 per cent of residential land in cities, the remainder being taken up by access roads, local shops and offices, distributor roads, high schools, shops, factories, religious and civic land uses, universities, airports and rail stations.

¹ These maps were published in the Commission's draft report. Further copies can be obtained from the Commission if required.

The National Capital Planning Authority provided some information about the proportion of local government areas in Melbourne which was given over to residential areas in 1981-82. This showed that area of zoned residential development expressed as a percentage of the total area ranged from 1.4 per cent in Sherbrooke to 80.9 per cent in Camberwell.

These data were then classified by the Commission into the urban zones used by the HALCS to define the various areas for its survey. This classification showed that the proportion of land zoned as residential varies widely within some zones. For example, in the core zone, only about 12 per cent of the largely industrial suburb of Port Melbourne is zoned for residential purposes compared with 73 per cent of Prahran. On the other hand, the proportion of zoned residential land in the inner zone shows much less variation (see table 8).

Table 8: Proportion of local government areas zoned for residential purposes, Melbourne Statistical Division, 1981-82

	<i>Zones as defined by HALCS</i>				
	<i>Core</i>	<i>Inner</i>	<i>Middle</i>	<i>Outer</i>	<i>Fringe</i>
Range	12.3	55.1	43.9	18.2	1.4
(per cent)	(Port Melbourne)	(Essendon)	(Williamstown)	(Croydon)	(Sherbrooke)
	73.3	74.1	80.9	72.8	46.8
	(Prahran)	(Malvern)	(Camberwell)	(Ringwood)	(Berwick)

Source: Compiled by the Commission from information provided by the National Capital Planning Authority.

Further information about the various proportions of urban areas devoted to roads, parks, industry, etc would appear to be useful in the analysis of the effects of increasing population densities in urban areas. However, these data are not readily available from land use planning and coordination agencies. In its draft report the Commission noted that the available information was poor and asked for any further material that participants might have on land use patterns, but little was received.

In commenting on the information deficiency McLoughlin said:

... we don't have poor information about Australian cities, we have atrocious information about Australian cities (DR transcript, p. 343).

He considered that a suitable geographical information system could be established for 'tens of thousands of dollars' and could be run for '\$100 000 for a three million [population] town' (DR transcript, p. 345).

Brisbane City Council said that it had a relatively good collection of data on land use but that it was difficult to access. It suggested that the Commonwealth Government could implement a pilot program to improve data availability and retrieval (Sub. 117, p. 2).

Dunham, the city valuer for the City of Melbourne said that it is about to establish a land information system which will provide information on land use in the city within the next two years (DR transcript, p. 381).

Does increasing density save much land?

Newman, Kenworthy and Vintila (NHS 1992b) argued that land would be used more efficiently if the density of urban development could be increased. They said that 'sprawling development' at the fringe consumes land at a very high rate, and estimated that about 3800 square metres of land (almost an acre) is needed to accommodate each new fringe dwelling in Melbourne, including the block itself, roads, community facilities, commercial, retail and industrial land.² A similar calculation for inner established areas was not given.

The extent to which an increase in urban density can save land and reduce the extent of 'urban sprawl' has, however, been the subject of some debate. McLoughlin (1992a) stated that there is considerable literature available to demonstrate the limited effects of higher density urban development on reducing the spread of cities. He used some hypothetical models to examine the effects of changing densities on urban areas.³ For example, he calculated that, in a city of one million situated on a featureless plain and with a circular form, a 'highly unlikely increase' in net residential density of from 30 to 40 persons per hectare would reduce the radius of the city from 14.6 kilometres to 13.6 kilometres, or about eight per cent. Raising density by one sixth (regarded by McLoughlin as a 'more credible' increase) was estimated to reduce urban development by about 500 metres in 14 kilometres. Because the same number of inhabitants will require the same area for the CBD, universities, cemeteries, freeways, big parks, airports and other uses regardless of how their living space is arranged, diminishing

² Calculated from the increase in urbanised area of Melbourne compared with the population increase between 1971 and 1981 and assuming an average of three persons per dwelling.

³ McLoughlin gave the following definitions as ways of measuring urban densities. *Net residential area* is the land occupied by dwellings, their access roads, incidental small open spaces, small local shops, offices and service premises, small primary schools, and half the width of adjoining suburban distributor roads. *Gross residential area* is the net residential area, plus secondary schools and colleges, medium sized local parks, small factories and workshops, and local civic, cultural, religious and similar land uses. *Overall urban area* is the gross residential area, all other developed and open areas within the identified outer limits of the urban metropolitan region.

returns set in rapidly and the model showed that increasing the net residential density from 45 to 50 persons per hectare reduced the city radius by about 200 metres.

McLoughlin also analysed the impact of increasing densities on the consumption of new land at the fringe in Melbourne (1992a) and Perth (1992b) over a number of years. He estimated that, in Melbourne, increasing densities in the Werribee and South Eastern corridors from 35 persons per hectare of net residential land (the traditional ‘quarter acre block’ figure) to 50 persons per hectare would reduce the outward expansion of the corridor (assumed to have an average width of six kilometres) by about four kilometres over a ten year period, even under the most favourable assumptions. In the Plenty corridor the same increase in density was estimated to shorten the outward growth by about 1.8 kilometres in the same time period. McLoughlin concluded that it is fallacious to claim that increased densities save land:

... clearly they save quite insignificant amounts even under the most favourable assumptions (1992a, p. 155).

In a similar analysis for Perth, he estimated that increasing density from 27.5 to 31.6 persons per hectare of net residential land would save about two per cent of land over 15 years and the city might be 200 metres less (in 26 or 27 kilometres) in its diameter (1992b, p. 11).

The House of Representatives (1992) concluded that:

The capacity of urban consolidation to save space and thus enhance economic, environmental and social benefits is limited ... (p. xii)

The report quoted a submission by Berry which stated:

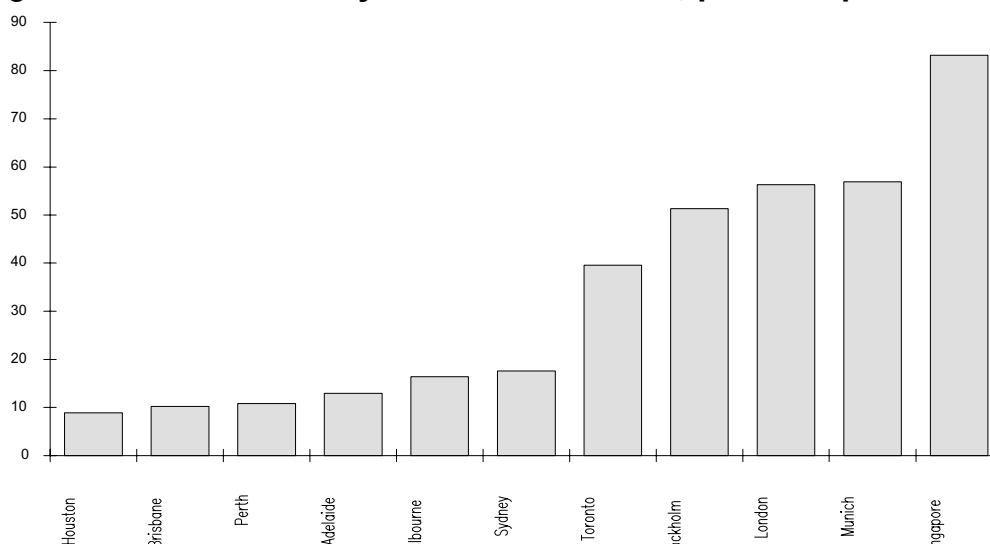
As net residential densities rise, the demand for non-residential land usage also rises, unless the newly crowded residents are to enjoy less access to public open space, road space, shopping, educational and other community facilities. These technical limits to effective densification are especially strong in the built up areas where new developments are constrained by what already exists – often reinforced by the defensive regulatory controls of local government The range of policies currently being considered by State and local governments – dual occupancy, small-lot subdivision, corridor development, developer levies, residential codes, demonstration projects and the like – will have a marginal impact on metropolitan spatial form. *At best* they will achieve a slowing of outward urban development over the next 10 to 20 years. *About 90 per cent of urban population growth will be located near and beyond the existing fringe.* To achieve a significantly higher degree of containment in this time horizon would require truly radical policy interventions – eg a ban on private motor vehicles within 25 kilometres of the GPO, nationalisation of land marked for new urban development or wholesale block resumption and clearance of built-up areas ... – the economic, social and (of course) electoral costs of which would be insupportable (p. 87, emphasis in the original).

The international context

Although the Australian population is concentrated in its major cities, those cities are still relatively small by world standards. In 1990, there were 276 agglomerations in the world containing about a third of the world's population. Of these, 58 were larger than Sydney and 75 were larger than Melbourne. Australian cities, however, are distinguished by their low population densities in comparison with many other large cities. Newman and Kenworthy (1989) calculated urban densities for selected cities around the world, measuring net density in persons per hectare. (Urban land was defined to exclude land used for agriculture, water bodies, forest, large open space areas – but not small local open space – and undeveloped urban zoned land.) Their comparisons showed that, while major Australian cities had a density of between 10 and 20 persons per hectare, population density in many overseas cities was upwards of 40 persons per hectare (see figure 4).

Newman attributed the low population densities in Australian cities largely to transport technology, arguing that Australian cities have grown mostly in the automobile era, which has made low-density car based suburban living feasible. He added that a cultural aspect was also evident; migrants coming to Australia from Europe or Asia were impressed with the seemingly endless space available and development reflected this (Sub. 92).

Figure 4: Urban density for selected cities, persons per hectare



Source: Based on Newman and Kenworthy 1989.

2.4 Summing up

Some of the key features of Australia's urban settlement patterns which emerge are:

- Australia is more highly urbanised than many countries;
- the Australian population is growing steadily – mainly through immigration – and its median age is gradually increasing;
- the average household is becoming smaller while the proportion of households without children is increasing. Despite these trends the average size of new homes has increased by 40 per cent since the early 1970s;
- in the longer term, growth of Australia's major cities is importantly influenced by the level of immigration and the locational preferences of immigrants;
- Australian cities have a low population density compared with most overseas cities.

A3 AUSTRALIAN URBAN LIVING – MYTHS AND REALITIES

Where households choose to live is determined by the interaction of many factors. Income, housing costs, travel costs, job opportunities and neighbourhood amenities will all be assessed and affect households' locational decisions. This chapter gives a brief 'statistical snapshot' of the influence of some of these factors on urban living in Sydney, Melbourne and Adelaide. There are some common perceptions about the way Australians live in their urban and suburban areas. Not all of them accord with the facts.

3.1 What affects locational choice?

The main factors which influence locational decisions by households are income and housing costs; travel costs; opportunities for employment in different areas; and neighbourhood characteristics.

Income and housing costs

One obvious feature of urban housing is that the location of the dwelling will influence its price. Variations in land prices and other factors such as construction costs and public housing policies may explain why identical dwellings may have different prices depending on location. These price differences will influence households choosing where to live within a particular urban area.

An increase in income will typically increase the demand for residential land and other housing amenities. This is typically expressed as a preference for houses on larger, rather than smaller, blocks, and townhouses or garden flats rather than high rises. As incomes rise, households will be more discriminating about neighbourhood amenities, and may choose a more expensive and better-serviced area. A greater demand for residential land also creates greater incentive to live in outer areas where land is cheap. Taken on its own, the increase in potential savings would favour the cheaper location, and would also bias workplace choice.

On the other hand, households on higher incomes will be more averse to spending time commuting. With a higher income, a household will be more discriminating and may prefer a more expensive and better-endowed area.

An increase in household incomes and a fall in housing costs have similar effects on household choice. But there is an additional effect from a fall in housing costs. Because housing is now relatively cheaper, it will be substituted for other commodities. By stimulating the demand for residential land it will strengthen the incentive to locate where land is cheaper.

Travel costs

All else being equal, commuting costs encourage households to live close to work. However, travel to places other than work is also having an increasing influence on where households choose to live. This is indicated by higher prices for sites with relatively easier access to popular places. While travel costs have an effect on where households choose to live, the size of these effects has not been surveyed in any depth.

Job opportunities

Different parts of the metropolitan area can form localised labour markets. To some extent, wages can vary in these markets to reflect the supply of particular jobs relative to their demand. For example, an area may need to offer a wage premium or other benefit to attract labour if it is distant from preferred residential areas.

Neighbourhood amenities

As noted above, the neighbourhood environment influences where households choose to live. The physical environment includes noise and pollution and the attractiveness of streets and buildings. American studies have considered a wide range of neighbourhood characteristics that influence housing prices: neighbourhood physical condition; school quality; crime; racial composition; neighbourhood socioeconomic status; air quality; access to work and commerce; and noise. Bartik and Smith (1987) noted that neighbourhood physical condition appears to be the best-performing indicator.

3.2 Some perceptions about living patterns

There are some general perceptions expressed in the media and the political arena about the characteristics of households and families in urban areas. Commonly held opinions include:

- singles and childless couples tend to live in the inner city and young families mostly live at the fringe of urban development;
- most Australians own or are buying their own homes;

- the cost of housing forces most first home buyers to live at the fringe;
- home buyers are forced to trade off affordable housing against long travelling times to work and inferior access to community services;
- low income groups are forced to live at the fringe; and
- most new housing is on ‘quarter acre’ blocks.

Data from the Housing and Locational Choice Survey (HALCS) conducted by the National Housing Strategy in 1991 in Sydney and Melbourne⁴, and the almost identical Housing and Locational Preferences Survey (HALPS) conducted in Adelaide by the ABS⁵, provide considerable detail on housing and household attitudes, and indirectly allow us to assess the accuracy of these views, for these cities at least.

For the purposes of analysis the HALCS divided the local government areas of both cities into five broadly concentric zones (core, inner, middle, outer and fringe) radiating from the Central Business District. One object of the zoning system was to allow consistent comparisons between the two cities.⁶ Forster was critical of the arbitrary division of cities into zones and, in particular, the distinction between the outer and fringe zones which he said might be better combined (Sub. 103). The Commission considers, however, that the distinction between outer and fringe zones established by the HALCS is reasonable as each zone has some particular characteristics. Those people living in the outer zone, for example, are likely to have access to better services (public transport, health education, etc) and work opportunities than those in the fringe zone.

⁴ The Housing and Locational Choice Survey was based on face-to-face interviews with 8530 households in Sydney and Melbourne (divided evenly between the cities) in early 1991.

⁵ The Housing and Locational Preferences Survey was based on face-to-face interviews with about 3300 households in Adelaide between March and May 1991. Unlike HALCS, the published data were not broken down into zones. For the purposes of analysis the Commission has divided the statistical division of Adelaide into four zones, as proposed by Hassan (1992). These zones were designated as inner metro, middle metro, north metro and south metro. The reasoning behind the zonal definitions and the suburbs in each zone are shown in Appendix G.

⁶ The NHS defined its zones in the following terms (details of the suburbs which comprise each zone in Sydney and Melbourne are shown in Appendix G):

The core and inner middle zones were differentiated according to distance from the CBD, while the outer areas were separated into two zones according to population densities and growth rates, as well as distance. The fringe zone comprises LGAs that are in the initial development states, which have low population density, high population growth rates, and are a considerable distance from the CBD (for example Camden and Wyong in Sydney and Werribee in Melbourne). The outer zone comprises more established LGAs with higher population densities and lower growth rates than the fringe (for example Liverpool, Blacktown and Dandenong).

Forster also questioned the use of proportions of households in each zone, rather than actual numbers, for the analysis of the HALCS results. The Commission acknowledges that there may be some differences in interpretation of the survey results between the two methods but it has used proportions to allow ready comparisons between the various zones in each city. This matter is discussed in more detail in relation to income distribution across city zones later in this chapter.

As in any survey, the use of averages to present information in a reasonably simple form will tend to disguise diversity. In assessing the general outcomes presented by the survey data, it should always be borne in mind that there may well be areas in each zone which would present a different picture if analysed individually, or over time. Nevertheless, the data provide a relatively recent 'snapshot' of the urban areas of three of our major cities in more detail than has previously been available.

Who lives where?

Contrary to some expectations, the survey data reveals that within each metropolitan zone, there is a wide range of household types. Figures 1 and 2 below show zone by household type for Sydney and Melbourne, and Adelaide.

The HALCS information suggests that households are distributed around the metropolitan areas of Sydney and Melbourne as follows:

outer and fringe areas:

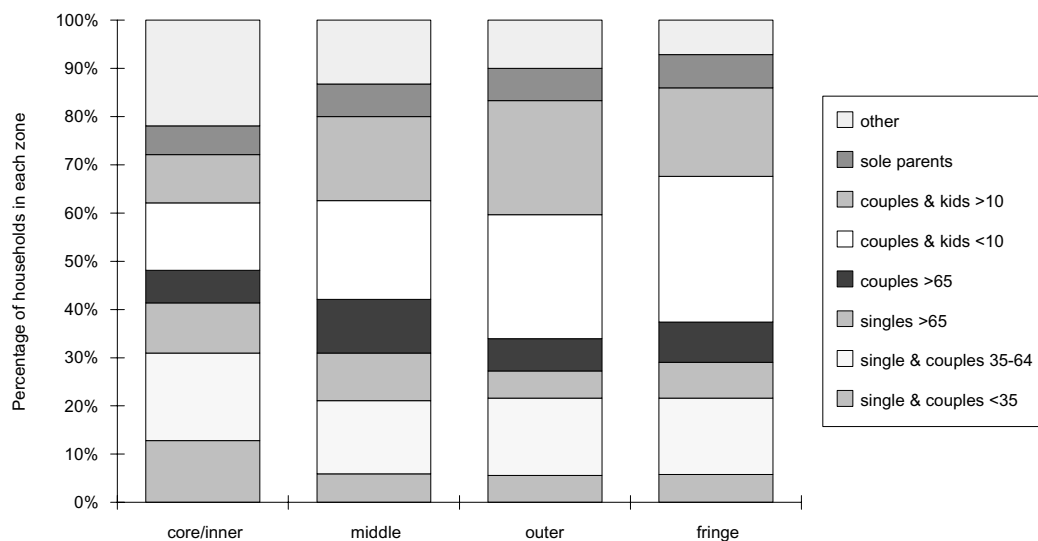
- outer and fringe areas both have high proportions of families with children (49 per cent in the fringe) but almost a quarter of the households were couples without children; and
- only 25 per cent of the fringe household heads were under 35, while almost 40 per cent were over 50.

middle areas:

- middle areas comprised about equal numbers of households with or without children, just over 20 per cent of household heads were single people and couples over 65 years of age; and
- almost half of the household heads in middle areas were over 50.

core/inner areas:

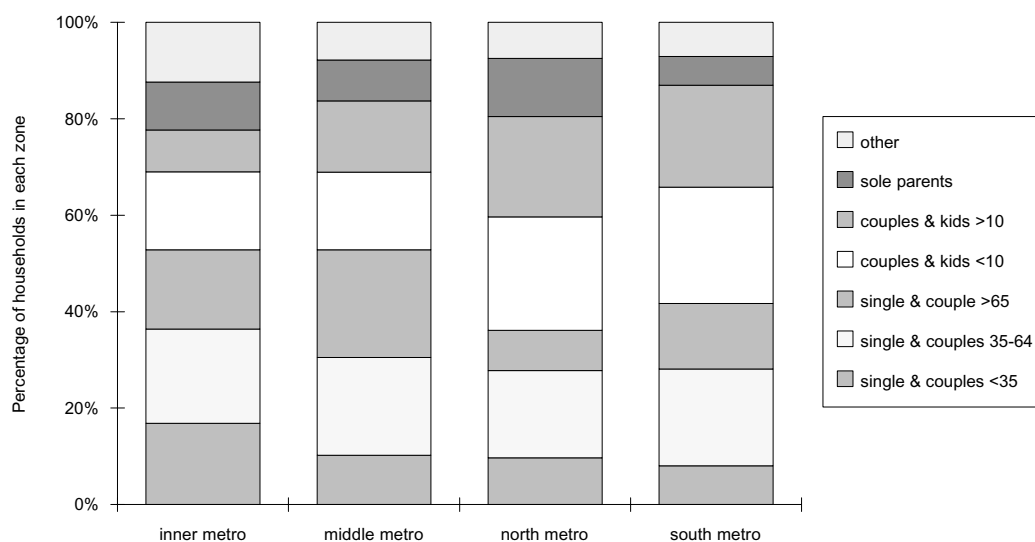
- core/inner areas are dominated by single people and couples without children, more so than other areas; and
- in core/inner areas, around 35 per cent of household heads were under 35 while 20 per cent were over 65 (NHS 1992a, pp. 13-14).

Figure 1: Zone by household type, Sydney and Melbourne, 1991

Source: NHS 1992a.

Data from the HALPS for Adelaide show that a higher proportion of households containing singles and couples live in the inner and middle metro areas, while couples with children make up a much higher proportion of households in the north and south metro areas. Singles and couples over 65 are represented more strongly in the inner and middle metro areas, while sole parents make up a higher percentage of households in the inner metro and north metro areas. (See figure 2). Because of the different zonal structure, Adelaide HALPS data are not directly comparable with HALCS data from Sydney and Melbourne.

Figure 2: Zone by household type, Adelaide, 1991.



Source: Compiled by the Commission from information provided by ABS.

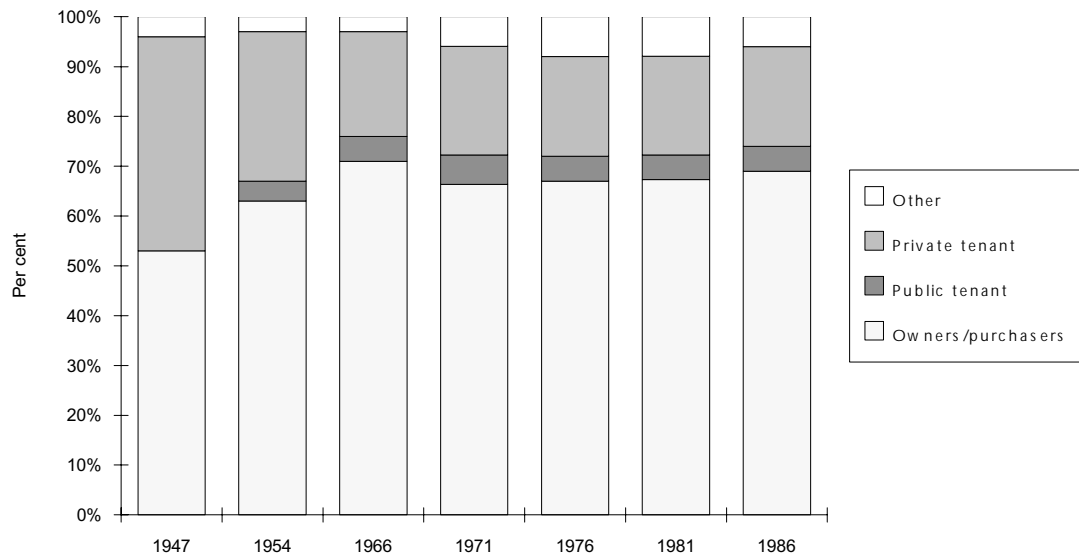
Renters or buyers?

Australians are traditionally considered as a nation of home owners and buyers. Figure 3 shows household and type of tenure in Australia for the census years 1947 to 1986.

Between 1947 and 1966 the rate of home ownership rose from about 50 per cent to 71 per cent but then fell back a little in the following years. Private rental accommodation, which in 1947 was 43 per cent of total tenures, now accounts for 20 per cent, while public rentals have remained stable over the period at about 5 per cent.

The considerable changes between 1947 and 1966 probably reflect a number of post-war developments including the rapid growth in population arising from natural increase and migration, a substantial rise in income levels, and the progressive removal of price controls from many rented properties.

Figure 3: **Households and tenure, Australia, census years 1947 to 1986**



Note: separate figures for public tenants not available for 1947.

Source: Based on Wood 1990a.

Where do households settle?

The two housing surveys (HALCS and HALPS) provide some insights about the way in which households are distributed across metropolitan Sydney, Melbourne, and Adelaide when classified by the type of tenure that they have on their dwelling (see figures 4, 5 and 6 below).

Renters

In Sydney, rental households represent a greater proportion (45 to 50 per cent) of households in the core and inner areas than in those areas further removed from the CBD. Melbourne, by contrast, has a higher proportion of renters in the core area (almost 60 per cent) than Sydney, but the proportion in other zones is generally lower. Nevertheless, even at the fringe in both cities they still make up a noticeable proportion (13 to 18 per cent) of households.

Renters in *public housing* in both Sydney and Melbourne represent only a small proportion of all renters (10 per cent or less) in each zone. In Sydney, public renters are spread unevenly across all zones, but in Melbourne the proportion of public renters decreases with distance from the CBD.

Private renters in Adelaide represent a much higher percentage of households in the inner and middle zones than in the north and south metros, but public renters tend to be concentrated in the middle, and particularly, the north metro zones.

Buyers

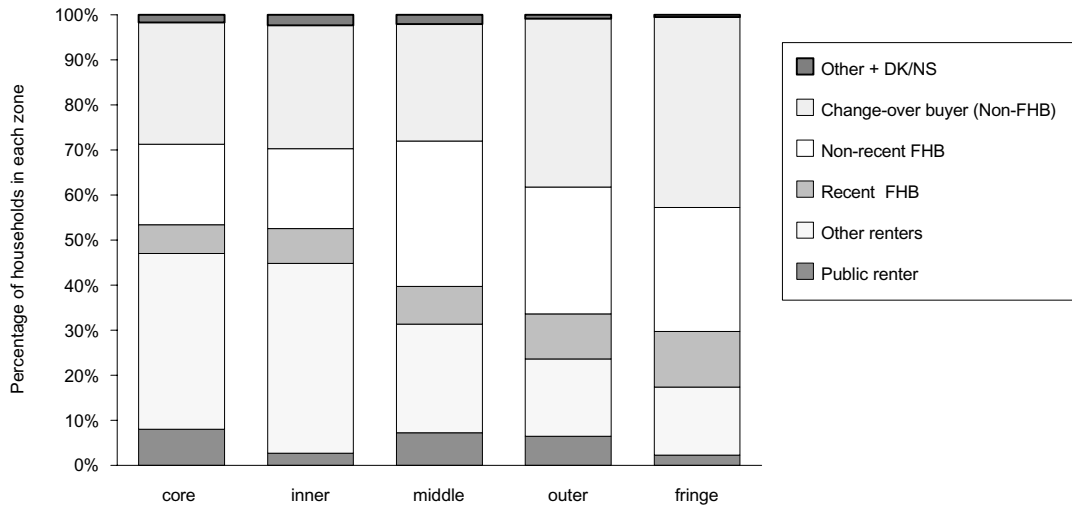
As noted, a commonly expressed view is that first home buyers are forced by the cost of housing to buy in fringe areas. This, in part, reflects a view that first home buyers tend to be from lower income groups and that housing at the fringe is less expensive than in other areas. HALCS data for Sydney and Melbourne, however, showed that recent first home buyers have a wide range of household incomes, with middle to high incomes predominant.

They also buy in all zones. The data also showed that recent and non-recent first home buyers are fairly evenly distributed across the middle, outer and fringe zones in Sydney and Melbourne. About 26 per cent of *recent* first home buyers in these cities live in the middle zone, 28 per cent in the outer zone and 30 per cent at the fringe. The proportion of *recent* first home buyers in an area, relative to all households, increases with distance from the CBD, rising from about 5 per cent in the core/inner areas to almost 15 per cent at the fringe. However, the largest proportion of purchases at the fringe (44 per cent) is made by change-over buyers, compared with 40 per cent to recent and non-recent first home buyers. At the fringe about 15 per cent of households are renters.

In outer areas the percentage of first home buyers and repeat buyers is equal, with about 20 per cent renters. Renters made up about a quarter of households in the middle areas where first home buyers are the largest group. Almost half the households in the inner/core area are renters, while the proportion of first home buyers exceeds that of change-over buyers.

In Adelaide, the proportion of recent first home buyers is higher in the north and south metro zones than in the inner and middle areas. Change-over buyers represent a much higher percentage of households in the south metro area than in any other zone.

Figure 4: Distribution of tenure types by zone, Sydney, 1991

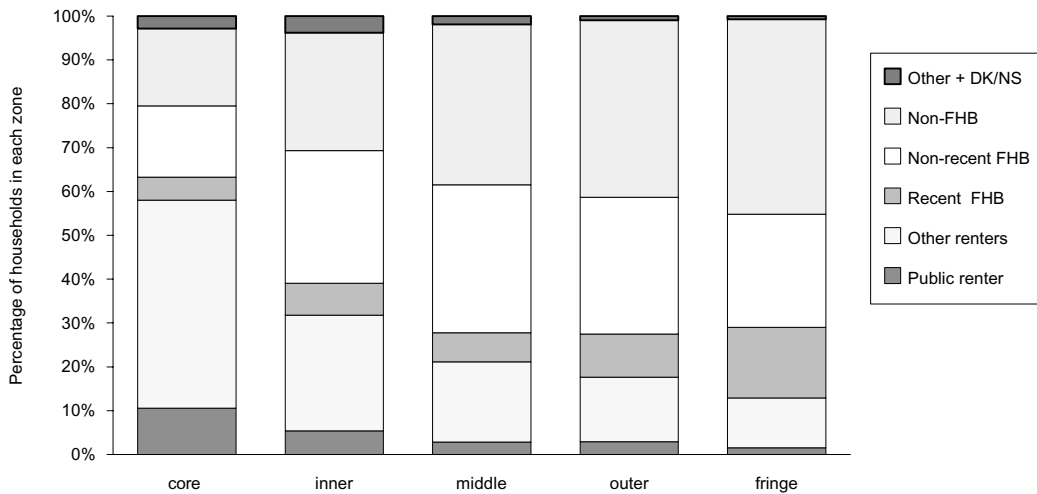


Notes: FHB - first home buyer

DK/NS - don't know / not stated

Source: Compiled by the Commission from HALCS data provided by the NHS.

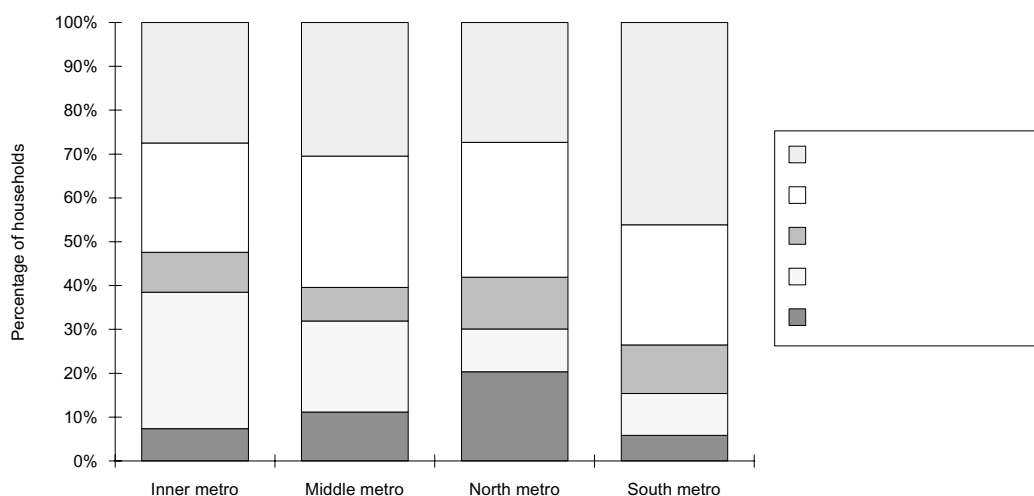
Figure 5: Distribution of tenure types by zone, Melbourne, 1991



Notes: FHB - first home buyer

DK/NS - don't know / not stated

Source: Compiled by the Commission from HALCS data provided by the NHS.

Figure 6: **Distribution of tenure types by zone, Adelaide, 1991**

Source: Compiled by the Commission from data provided by ABS.

Why did they move?

The HALCS data suggests that the differences between first home buyers and change-over buyers in their stated reasons for moving to particular areas are such as to reflect two groups with different motivations and expectations.

First home buyers

First home buyers were most concerned to change their tenure to home ownership, with affordability the main factor in selecting an area. Although a higher proportion of movers to the fringe were concerned about price, it also was the major consideration with those who chose the core/inner area. On the other hand, movers to the core/inner area were much more influenced by employment aspects than those who moved to the fringe.

Change-over buyers

Change-over buyers who moved to the fringe were influenced by scenic and environmental aspects to a greater degree than any other factors, although price and social contacts were also important to them. Price was also important to change-over buyers who moved to the core/inner areas, but was of less significance than access to services and employment factors.

General comments

The Survey did not disclose any major differences between attitudes in Melbourne and Sydney. However, affordability factors were more important for Sydney movers because of higher housing costs. Affordability was also the most important factor to first home buyers and among the most important for change-over buyers. Interestingly, affordability was nearly as important for inner city purchasers as for those at the fringe, suggesting that buyers were not unduly forced by price to locate at the fringe. Indeed, a clear picture of consumer choice emerges from figures 7 and 8. Those who located in the core/inner areas are concerned with employment and the desire to be in familiar areas, while those at the fringe value amenity. Change-over buyers value the services available in inner city areas, but new home buyers place little value on them in either location.

Flood et al (1991) consider that, with increasing affluence and decreasing transport and communication costs, consumption considerations rather than income considerations begin to determine location decisions:

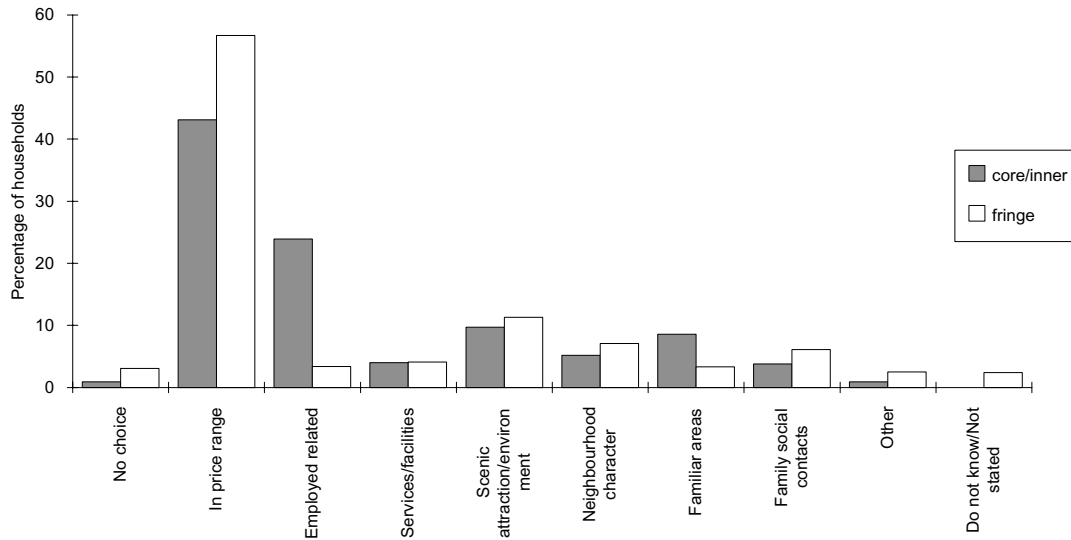
... once basic economic necessities have been satisfied, people move to where they want to live rather than where they have to live (p. 19).

Hassan said that the HALPS conducted in Adelaide included some attitudinal questions and that the main findings were a wide support for housing and tenure mix in all areas, strong preference for private gardens and latent support for the underlying rationale for urban consolidation, as long as it did not occur in the neighbourhood where respondents live. Around 50 per cent of respondents favoured the traditional style of housing (separate house on a normal block), 30 per cent described themselves as environmentally conscious and favoured policies to change existing urban form and 20 per cent were indifferent. (Sub. 141, p. 1).

Compromises and adjustments

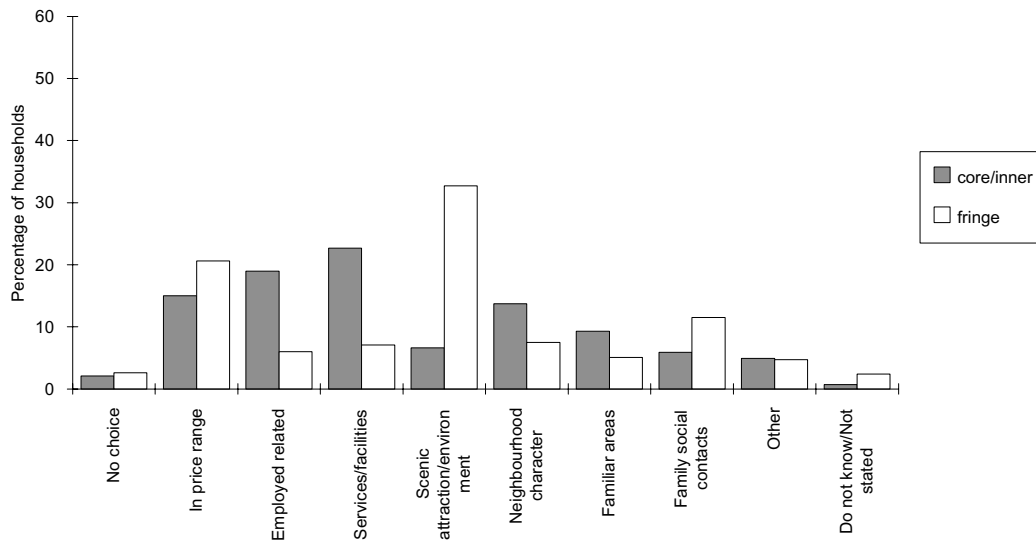
Households may make compromises in their housing and location decisions. They will be faced with a choice which may involve both benefits and costs; the pattern of benefits and costs will be different for each area of the city. For example, the choices facing buyers and renters in inner city locations in relation to housing types and access to work and services will be different for those who are looking to move to the fringe.

Figure 7: Reasons for selecting area - first home buyers moving to core/inner and fringe zones, Sydney and Melbourne, 1991



Source: Compiled by the Commission from HALCS data provided by the NHS.

Figure 8: Reasons for selecting area - change-over buyers moving to core/inner and fringe zones, Sydney and Melbourne, 1991



Source: Compiled by the Commission from HALCS data provided by the NHS.

Households may be prepared to trade off some factors against others to achieve a perceived desirable outcome. Perhaps they may exchange access to important services to gain initial home ownership or to live in a more desirable location.

HALCS collected data on the compromises that respondents made in choosing their housing location. However, the statistical validity of the data was reduced because a large number of respondents in each zone (up to 60 per cent in some cases) indicated that factors other than those listed in the questionnaire were the items on which they compromised. Nevertheless, some general observations can be made from the available information.

Some households reported that they made no compromise in moving to a new location but for those who did, the factors were broadly similar at different stages of their housing career. The most common compromises were over dwelling/land size, particularly in core/inner areas. First home buyers on the fringe compromised to a greater extent than change-over buyers or renters on size of dwelling and access to work.

Owner/purchaser households in inner areas were most likely to compromise on dwelling and the land. In comparison, fringe areas households were less likely to compromise on the size of house, but more likely to compromise on access to work and services.

In summary, people choose locations according to the services they want and need, and they may be prepared to make subsequent changes to their lives once they have settled in to their new house. For example, data on travel to work (considered later in this chapter) show that many people live in reasonable proximity to their place of work. This suggests that, while a household may initially trade-off access to work for other gains, it may then find jobs in the local area to reduce travelling times.

Movement patterns

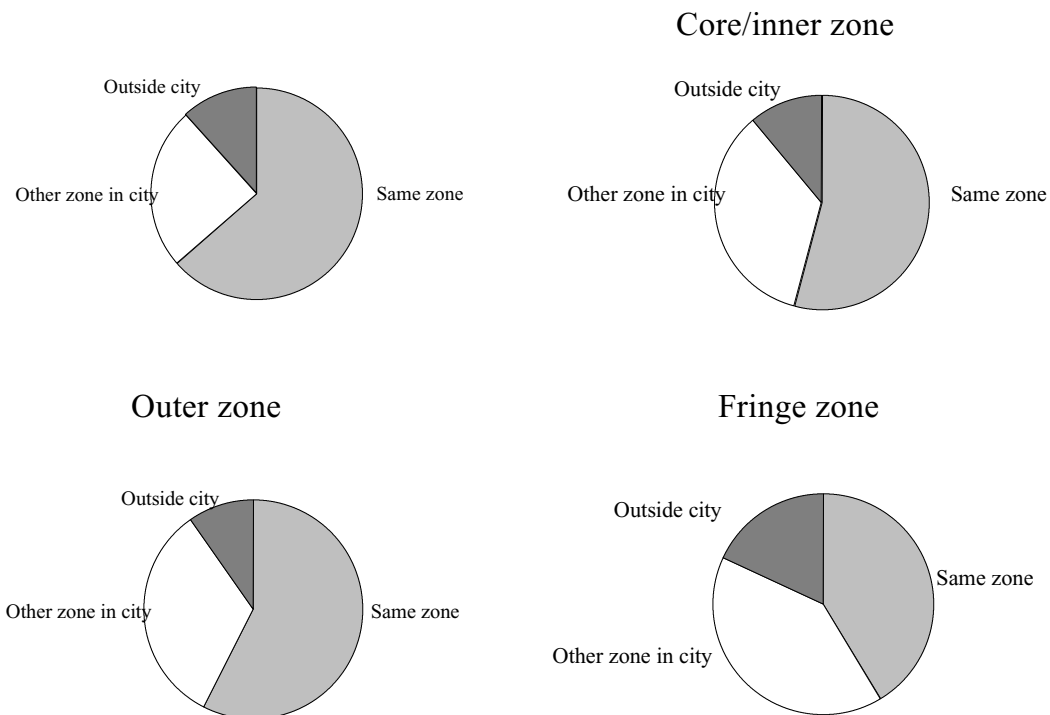
Bell (1992) estimated that:

Between 1981 and 1986 more than 5.5 million people – over 41 per cent of the population – changed their place of usual residence. In 1985-86 alone, one in six Australians – nearly 2.5 million in all – moved to a new dwelling (p. 1).

Further, the dominant feature of net migration flows between statistical regions within Australia's five major cities is an outward radial movement of people from the inner and middle suburbs towards and beyond the metropolitan areas. This outward migration from the city centre is evident in each capital city.

Both census information and the HALCS also suggest that there is a pattern of movement from the inner to the outer suburbs but it appears to be undertaken in a series of short hops. For example, the HALCS found that in Sydney and Melbourne, other than in the fringe, a high proportion of those who moved only moved a relatively short distance, mostly within their own zone (see figure 9). Data available for Adelaide from the HALPS showed a similar pattern of household movement within zones to that in Sydney and Melbourne.

Figure 9: **Origin of movers to various zones, Sydney and Melbourne, 1991**



Source: NHS 1992a.

The distribution of income levels across cities

Up-to-date information about the distribution of income around cities is limited. The most recent data available in detail for each capital city is from the 1986 census. This was analysed in a paper prepared for the Social Justice Research Program into Locational Disadvantage by Maher et al (1992), which noted that:

... the highest levels of disposable income usually are found in suburbs which are newer (although their development stage is generally largely over), but not as far removed from

accessibility to the city as the very newest suburbs. These suburbs are also high in environmental amenity ...

There are two types of areas which are low in disposable income ... On the one hand there are the older inner city locations, or the older industrial suburbs, particularly in the largest cities ... The other type of area is peripheral to the city and can be described as 'extra-urban' in the sense that it covers areas which generally are not formally linked to the growth and functioning of the urban area, but are somewhat peripheral to it. These areas are undergoing less suburban development than the most rapidly growing areas, but comprise older, cheaper housing, frequently in areas popular for holiday houses or semi-rural properties too distant from the urban area to be affected by the sometimes considerable increases in the price of urban housing (pp. 56-57, 59).

More recent information (1991) is available from HALCS data for Sydney and Melbourne (see figures 10 and 11), and for Adelaide from HALPS (see figure 12).⁷ These figures are based on gross household income and as such are subject to some limitations. For example, as Forster noted, they take no account of household size or wealth, which may reduce their usefulness as a guide to areas of relative poverty (Sub. 103). Nevertheless, they can provide a general picture of where households of different income levels are in each city, subject, of course, to the caveats mentioned earlier about the way in which zone averages can disguise the characteristics of particular areas within the zones.

The HALCS data showed that:

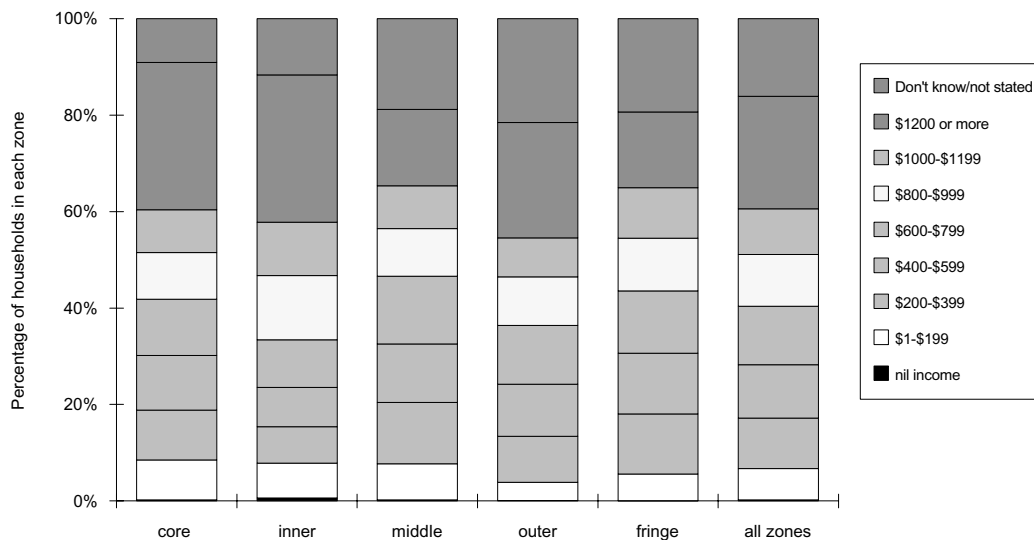
- in Sydney households with an income of between \$400 and \$1199 per week were fairly evenly distributed across all zones. In Melbourne there was a reasonably even distribution across the core, inner middle and outer zones with a considerably higher proportion in the fringe zone.
- households with an income of \$399 or less per week were distributed across the zones in Sydney while in Melbourne they represented a higher proportion in the core and inner zones but a lower proportion in the zones further removed from the city centre; and
- high income households (\$1200 or more per week) represented a higher proportion of households in the core and inner zones in Sydney, but in Melbourne the middle zone contained the highest proportion of this income group.

Data from the HALPS in Adelaide were not fully comparable with that for Sydney and Melbourne, being grouped instead into annual income classifications. Nevertheless, a similar analysis shows:

⁷ HALCS and HALPS data were collected by asking each person in the responding household into which particular income grouping their annual gross income (that is, before tax, superannuation, and other deductions) fell.

- households with annual incomes of between \$20 000 and \$60 000 (about \$385 to \$1185 per week) represented about 40 per cent of households in the inner and middle metro zones, and about 50 per cent of households in the north and south metro zones.
- the proportion of low income households (less than \$20 000 per year, or about \$385 per week) in the inner, middle and north zones was reasonably constant (36 to 42 per cent) but lower in the south zone (30 per cent).
- high income households (over \$60 000 per year or about \$1185 per week) represented a higher percentage in the inner zone than in the others.

Figure 10: **Proportion of households in each zone, classified by gross household income, Sydney, 1991 (\$ per week)**

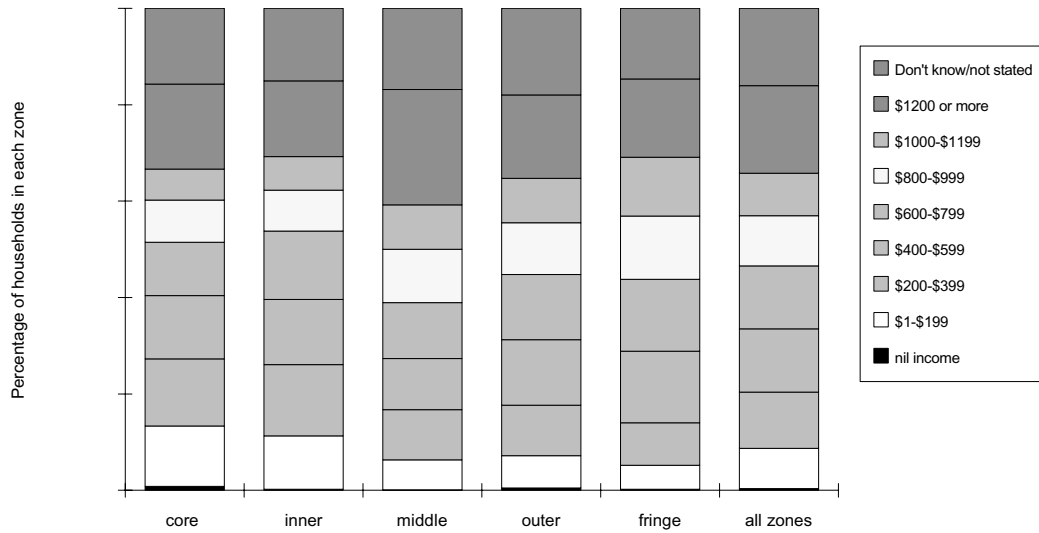


Source: Compiled by the Commission from HALCS data provided by the NHS.

Forster argued that merely looking at the proportions of households in each zone was misleading:

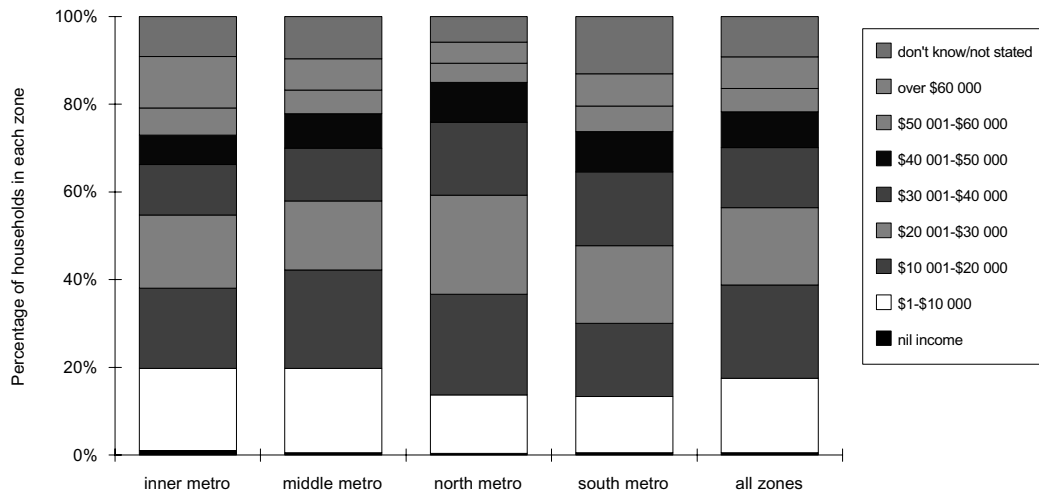
... because the total number of households in Melbourne's outer and fringe zones (471 730) is considerably larger than in the inner city and core zones (312 310), the *absolute number* of low income households is at least as large in the outer zones, even in Melbourne with its inner suburban high rise public housing estates. In Sydney, where 628 980 households live in the outer and fringe zones compared with only 216 240 in the inner and core zones, it is clear that, in absolute numbers, *many more* low income households live in the outer suburbs than in the inner ... (Sub. 103, p. 3, emphasis in the original.)

Figure 11: Proportion of households in each zone, classified by gross household income, Melbourne, 1991 (\$ per week)



Source: Compiled by the Commission from HALCS data provided by the NHS.

Figure 12: Proportion of households in each zone, classified by gross household income, Adelaide, 1991. (Annual income, \$)



Source: Compiled by the Commission from data provided by ABS.

Absolute figures on households with an income of less than \$400 per week in each zone in Sydney and Melbourne calculated from the HALCS show that the largest number of these households live in the middle zones in both Sydney and Melbourne. In Sydney about equal numbers live in the fringe and outer zones, but even when combined, as suggested by Forster, these numbers are not greatly in excess of the number living in the middle zone. In Melbourne the number in the fringe zone is markedly fewer than in the outer zone, middle or core zones. See table 1.

Table 1: Low income families (household income less than \$400 per week) classified by zone, Melbourne and Sydney

	<i>core</i>		<i>inner</i>		<i>middle</i>		<i>outer</i>		<i>fringe</i>		<i>total</i>	
	<i>no</i>	<i>%</i>	<i>no</i>	<i>%</i>	<i>no</i>	<i>%</i>	<i>no</i>	<i>%</i>	<i>no</i>	<i>%</i>	<i>no</i>	<i>%</i>
Sydney	26 330	12	11 728	5	84 951	39	47 598	22	49 428	22	220 035	100
Melbourne	44 815	21	38 574	18	53 477	25	48 403	23	27 771	13	213 040	100

Source: Calculated from HALCS data.

It is evident that proportional analysis and numerical analysis tell somewhat different stories about income distribution in cities. Both forms of analysis provide useful insights into urban settlement patterns. However, given that there are some low income households distributed across all zones in cities, it is likely that there will be a higher number in those areas where population is higher, even though the proportions are lower.

Forster also argued that:

... overall the outer areas are gaining population, the inner areas still losing. The numbers of low income households in the outer suburbs are therefore rising and the numbers in the inner suburbs are falling ... (Sub. 103, p. 3).

The CSIRO, however, did not agree with this, arguing that:

... the loss from core areas has slowed to a trickle everywhere except Melbourne: young people and immigrants are now balancing the general outflow of over-25 Australian born. Studies show that gentrification is quite patchy and sporadic, and although there might be a slight fall in low income earners in the centre, the proportions are still much higher ... (Sub. 164, p.1).

In summary, the income distribution data suggest that a commonly expressed opinion that rising values and 'gentrification' have forced the poor out of the city to the fringes is an over-simplification. Rather, both the mobility study and the HALCS and HALPS data indicate that the lower income groups tend to be spread across zones in both Sydney and Melbourne. In Adelaide, low income

households are fairly evenly spread across three of the four defined zones. In all cities, however, there may well be ‘pockets’ of low income earners in particular areas in any or all zones and, equally, there may be high income earners in all areas.

The distribution of income groups across all areas of cities suggests that the provision of wide-ranging subsidised services to particular areas may not be an effective or well targeted means of assisting disadvantaged families – the assistance intended for needy households may also assist those on higher incomes.

The quarter acre block?

Most discussions about urban development inevitably mention the ‘quarter acre’ block (about 1000 square metres) on which Australians are reputed to build. For example, the Victorian Minister for Planning and Housing (1992) said:

The most useful thing we can do ... is to cure Victoria of its addiction to three-bedroom houses on quarter-acre blocks (p. 3).

The Municipal Association of Victoria stated:

... as soon as immigrants ... get into the Australian way of life, they are looking for their quarter-acre block or 5-acre block as well and quickly adopt that particular aspect of our lifestyle (transcript, p. 5).

In practice, blocks in modern sub-divisions are mostly well below 1000 square metres in area. For example, in July 1992, only about 17 per cent of the stock of blocks in the Urban Development Plan Area of Sydney, which comprises 11 local government areas towards the outer areas of the city, comprised blocks of 800 square metres or larger in area (see figure 13).

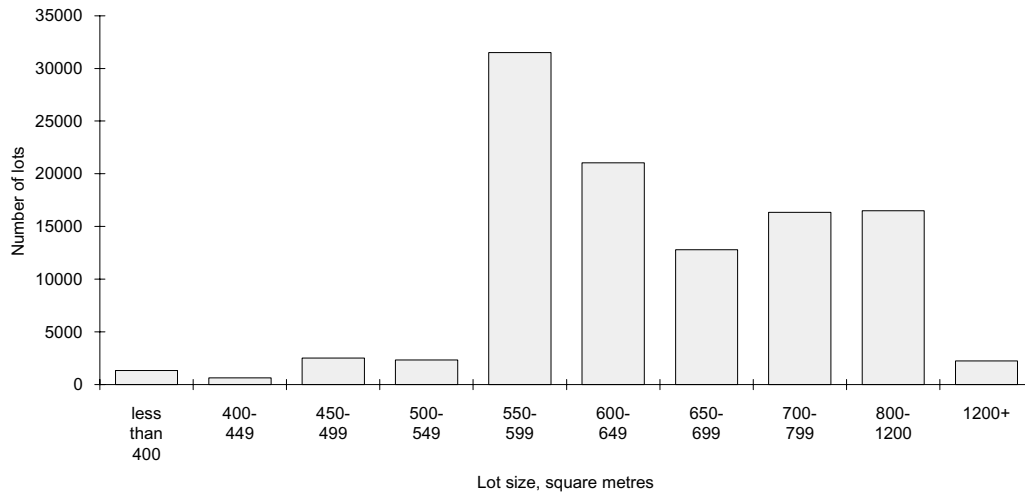
The DHHCS noted that:

While the archetypal Australian block is the ‘quarter acre’, ... this size block was commonly used for suburban development only until the 1950s and 1960s, after which it was replaced by a ‘standard’ of between 700 to 800 square metres. More recent developments have demonstrated the regular use of blocks of 550 to 650 square metres and small blocks on individual title of 300 square metres or smaller (Sub. 85, p. 20).

The Victorian Urban Land Authority said:

The majority of private sector developers are still aiming at 700-800 square metre lot developments ... Because of the ULA’s wider range of product, 50 per cent of which would be below 500 square metres, the ULA has been able to produce very price competitive products (Sub. 97, p. 2).

Figure 13: Distribution of blocks by size, Sydney UDP areas, at 9 July 1992



Source: Sydney Water Board, Land Availability Data Systems.

Homeswest said that, in Perth, the 700 square metre lot is the standard size block, and that it is interested in reducing block size to further increase urban density (transcript, p. 687).

There appears to be little information available on the distribution of block sizes in existing, long-established areas. It is likely that there would be wide variations across the urban areas depending on when sub-division took place. For example, small blocks characterise the 19th century precincts in the older capital cities, while those areas which were developed from the 1920s through to the 1960s might be expected to show a preponderance of blocks around the traditional 'quarter acre' in size.

3.3 Transport and employment

The relationships between residential location, transport modes and journey to work times are of considerable interest in any study of urban settlement patterns. The Australian Automobile Association said:

... urban sprawl is already regarded as being a problem in some cities to the extent that it is associated with increased traffic volume, vehicle emissions, energy usage and congestion. It is also argued that the expansion in the spatial pattern of a city reduces the efficiency of public transport and that this too will exacerbate the environmental problems ...

Clearly, transport factors are likely to be significant determinants of residential and business location and hence urban land use. It follows that inefficiencies in the provision of transport infrastructure and how it is used will impact on the efficiency of land use (Sub. 17, pp. 1, 3).

Travel times to work

The HALCS provides reasonably recent information on average travel times to work for Sydney and Melbourne and on major transport modes. The main conclusions that can be reached from the published HALCS data are:

- the further from the CBD that people live, the greater the reliance on car travel to work. The percentage of journeys to work by car rises from about 50 per cent in the core/inner areas to about 70 per cent at the fringe, while the percentage of journeys to work by public transport decreases from the core/inner areas to the fringe;
- workers in Sydney are more likely to use public transport than those in Melbourne;
- while average travel time to work rises with distance that people live from the CBD, it does not increase to any large extent. It rises on average from 20 minutes in the inner Sydney area to 32 minutes at the fringe, while in Melbourne it increases from 20 minutes to 26 minutes; and
- car drivers reach their destinations faster than those using public transport.

HALPS data for Adelaide showed that the proportion of travellers who reached work in less than 30 minutes decreased from 90 per cent in the inner metro zone to 66 per cent in the south metro zone. Only a small percentage of travellers took longer than 45 minutes to reach work from any zone.

Travel modes to work

In both Sydney and Melbourne, HALCS data show the proportion of respondents driving from home to work increased with distance from the CBD, while the proportion of commuters using public transport decreased. In Adelaide HALPS data show a similar pattern. Regardless of zone, at least 40 per cent of travellers in Sydney, 50 per cent in Melbourne and 65 per cent in Adelaide drove to work. Only small proportions of commuters used mixed mode transport (public transport with some other mode of travel) or travelled in a car as a passenger in any of these cities. The proportion of respondents who walked, cycled or used a motor cycle was fairly evenly distributed across zones in all cities except for the core zone, where it was much higher.

Generally speaking, there was greater reliance on driver only journeys from home to work, and less reliance on public transport only, across all zones in Adelaide and Melbourne than in Sydney.

As in Sydney, Melbourne, and Adelaide, travel surveys carried out in Brisbane in 1976 and 1986 showed a reliance on cars for travel for all journeys. Travel by private cars, as a driver or passenger, accounted for 81 per cent of all trips in 1986, an increase from 74 per cent in 1976. The public transport share (bus, train, ferry) of total transport fell from 11 per cent in 1976 to 8 per cent in 1986, despite claimed significant improvements to services and infrastructure.

Commuting travel patterns

The Brisbane Travel Surveys showed a 30 per cent increase in travel, from 3.19 trips per person per day in 1976 to 4.16 trips per person per day in 1986 (Brisbane City Council 1990, p. 116). This was mainly due to increases in trip rates for vehicle driver and passengers.

The growth in passenger travel was related to:

- the changing structure of the population;
- the changing distribution of population and employment;
- social factors (for example, increasing proportion of females holding drivers' licences);
- economic factors (for example, increasing female labour force participation and rising household incomes); and
- transport availability (for example, the provision of new freeways encouraged further urban development in the southern and western corridors, thereby encouraging further travel).

Brotchie (1992) examined commuting travel patterns in Melbourne from 1986 census data, using zone classifications of central, inner and middle, and outer and fringe. He found that 32 per cent of trips were intrazonal, with an average length of about 10 kilometres and 38 per cent were interzonal with an average length of less than 20 kilometres. In terms of time, the shortest trips were in the inner middle and outer fringe rings with a travel time of less than 20 minutes. These figures are reasonably comparable to those from the HALCS.

He also found that commuting patterns are becoming increasingly dispersed. Of commuting trips originating in the Melbourne statistical division, 5.8 per cent originated in the central region and travelled to employment there; 24.5 per cent originated in the surrounding suburbs with destination in the central region; 2 per

cent travelled from the central region to the suburbs; but 68 per cent had origin and destination in the suburbs.

Brotchie added that suburban employment is less concentrated than employment in the CBD. About two-thirds of trips in the suburbs were in a radial direction and the remainder circumferential. The dispersed nature of origins and destinations ruled against the use of mass transit public transport for most people but suited private transport use .

The New South Wales Department of Transport said:

... while Sydney CBD accounts for only 14% of all jobs in the Metropolitan area, it accounts for 46% of all work trips taken by public transport. However, over the Metropolitan region as a whole, the preferred mode of transport for employment travel is the private car (Sub. 70, p. 6).

Brisbane City Council said that many types of employment are still concentrated in the CBD and its fringe. This includes business, financial and community services which are the employment categories with strongest growth. It also said that employment is not decentralising or subcentralising as rapidly as the population is suburbanising. The Council saw advantages in increasing the resident work force in areas of high employment to reduce journey to work distances and consequent pressure on roads and public transport (Sub. 117, p. 2).

Although some participants were critical of the adverse effects of private cars in urban areas, cars can also provide workers with increased flexibility in finding employment and in following recreational pursuits. Car ownership in Australia has increased steadily from one car for every 2.8 persons in 1976 to one car for every 2.1 persons in 1991.

Employment patterns

Historically, employment has been centred in the CBD and inner suburbs, and workers have travelled to it by means of a system of radial public transport or roads. For example, Newman and Kenworthy (1991) said that in Australia (as in many other countries) the proportion of jobs in the CBD and inner areas was higher than the proportion of the population in those areas. Although the proportion of jobs in the CBD and inner areas differed in some of the selected Australian cities the distribution was generally comparable to that of the two selected cities in the United States and Canada. However, the job concentration in these areas in London and Stockholm was much higher (see table 2).

Table 2: **The distribution of population and jobs in CBD and inner areas for selected cities, 1981**

<i>City</i>	<i>Proportion of population in CBD (%)</i>	<i>Proportion of jobs in CBD (%)</i>	<i>Proportion of population in inner areas (%)</i>	<i>Proportion of jobs in inner areas (%)</i>
Sydney	0.1	13.2	16.7	39.3
Melbourne	0.2	15.2	9.0	33.2
Brisbane	0.3	13.9	21.7	45.7
Adelaide	0.2	14.4	11.6	37.3
Perth	0.7	24.1	22.9	51.0
Chicago	0.1	12.3	42.3	44.9
Houston	0.1	11.6	16.6	41.1
Toronto	0.2	13.4	35.7	47.9
Stockholm	6.4	26.3	49.3	74.7
London	2.7	29.7	37.2	55.1

Source: Newman and Kenworthy 1991.

There is some evidence, however, that this situation may be changing. The CSIRO Division of Building, Construction and Engineering said that technological change is affecting city structure and that market forces are operating to restructure cities to work in a more efficient way as multi-centred systems, with key activities retained in the city centres but with other functions dispersed to suburban centres and industrial parks (Sub. 89, p.1).

Brotchie (1992) quoted studies by Gordon *et al* (1989, 1990) which show that work trip time in the 20 largest cities in the United States has reduced by an average of 8 per cent over the period 1980 to 1985. The reduction is attributed to the dispersal of employment and of housing, and a consequent substantial shift from longer trips between the suburbs and the central city to shorter trips within the outer suburbs.

Hensher noted that the decentralisation of residential location has provided an incentive for greater suburbanisation of work places. For example, Sydney's central business district and sub-centres (for example, Parramatta and Chatswood) account for only 25 per cent of all jobs. A related feature of urban dispersal is the growth in inter-suburban commuting. Hensher sees this as a good reason for rejecting the traditional view of the suburb as predominantly residential. He says:

The traditional view of the suburb to central city commuter trip is being replaced at a rapid rate by the inter-suburban commuter trip. There are good examples in Sydney at North Ryde and Castle Hill. Suburban offices are also a growing proportion of total metropolitan office stock in Melbourne [Bell 1990, Brotchie 1991] (Hensher 1992).

The DHHCS also commented on the changing nature of the location of employment in both Sydney and Melbourne, noting that the most common adjustment following a move to the fringe for purchasers and in particular first home buyers was increased travel to work. However, it also cited HALCS data which showed that average travel time to work does not vary much with increasing distance from the CBD. This suggests that, after moving to a fringe suburb, many workers will find employment closer to their new homes.

The changing nature of the cities is reflected in the journey to work data examined earlier in this chapter. Even in the fringe areas of Sydney and Melbourne, the majority of respondents to the HALCS took less than 30 minutes to reach work from home, irrespective of the transport mode used. While some of the time reduction for residents of outer and fringe areas is undoubtedly a result of substitution of car travel for public transport, there is a strong implication that a high proportion of respondents live in reasonable proximity to their workplace.

3.4 Summing up

While statistical averages taken across arbitrarily defined urban zones can disguise the wide diversity of individual households, they nevertheless provide a general ‘snapshot’ of the way in which Australian live in their cities.

Household locational choice

- Income is a major determinant of where households choose to live. An increase in income will usually stimulate demand for housing; may stimulate demand for housing at the fringe; and will allow households to be more discriminating about location.
- Commuting costs encourage people to live close to work but locational decisions may also be influenced by travel costs to other locations.
- Neighbourhood characteristics, such as physical condition, school quality, socioeconomic status and air quality are also factors which bear on locational decisions.

Australians and their homes

- A wide range of family types is distributed reasonably evenly across the urban areas.
- The majority of Australians either own or are buying their own homes.

- First home buyers are fairly evenly distributed across the middle, outer and fringe zones of the metropolitan areas. The majority of buyers at the fringe in Sydney and Melbourne, and to a lesser extent, Adelaide, are repeat purchasers.
- First home buyers are most concerned with price in making their choice of location, but change-over buyers are more influenced by scenic and environmental factors.
- Low income earners are not forced to the fringe for accommodation but rather are spread across the metropolitan areas in Sydney, Melbourne and Adelaide.
- Urban blocks of land have declined considerably in size since the 1960s. Most modern urban subdivisions are now made up of blocks considerably smaller than the traditional 'quarter acre'.

Transport and employment

- Transport factors, particularly those related to time and mode of travel to work, are an important part of locational decisions made by households.
- Between 1976 and 1986, the average number of trips per day in Brisbane rose by 30 per cent, mainly attributable to increased trip rates by car drivers and passengers.
- Average travel times to work in Sydney and Melbourne do not vary greatly with distance from the city centre.
- The private car is the most common mode of travel to work in Brisbane, Sydney, Melbourne and Adelaide.
- Employment is gradually moving away from the traditional inner city locations and is being dispersed around the metropolitan areas. This trend is likely to increase reliance on the private car for transport to work.

A4 GOVERNMENT OBJECTIVES

In dealing with urban matters, governments at all levels try to meet many objectives. Some of them are overtly stated, some are implicit and some may be inherently conflicting. Achieving 'efficiency' in relation to urban land use requires a balance between community preferences and the resource costs involved.

4.1 Introduction

The *Report of the Working Group on the Patterns of Urban Settlement* prepared for the special Premiers' Conference in July 1991 summarised the objectives of governments in relation to urban settlement as:

- urban settlement patterns which maximise the economic, social and environmental benefits and minimise the costs. Principally this means ensuring the efficient and effective allocation of resources; and
- more equitable outcomes, particularly in terms of access to services, affordable and appropriate housing and employment opportunities, and enhancement and maintenance of environmental quality (p. 2).

The terms of reference for this inquiry require the Commission to:

... take account of economic, social and environmental objectives of governments affecting urban planning and development ... (para. 4).

The Commonwealth, State and Territory governments all helped draw up those terms of reference. The Commission therefore sought statements from each government as to which policies in particular the Commission was expected to take into account.

Some objectives are broadly specified. This perhaps represents an acknowledgment that, while the general direction of desired policy is clear, tradeoffs may be required when it comes to the details of implementation. As the New South Wales Treasury noted:

... in some cases objectives in one of the three areas (economic, environmental, social) spill over into either or both of the other areas. Conversely, there may be perceived conflicts between say economic or social objectives and protection of the environment. Lack of adequate quantitative information as to the perceived impacts increases the difficulties for integrated planning (Sub. 70, p. 1).

Different governments can have different policy objectives

In part because of constitutional or legislative differences in their powers and responsibilities, the objectives which different governments, and different levels of government, seek to achieve in their urban programs will vary considerably. The Commonwealth has a major influence on the types of programs governments pursue through the way in which funding is provided to other levels of government. It can implement its own priorities through funds provided under specific allocations, such as those made under the Building Better Cities program. States and Territories have more flexibility in the types of programs they can undertake when using Commonwealth funds provided through general, 'untied' revenues, and their own funding.

Institutional arrangements for the delivery of some services vary between different States, Territories and local government areas. This can have an effect on how the urban policy objectives of each government are formulated, and on the observed outcomes. Conflicts can also arise between the various levels of government. For example, State governments determine the broad planning parameters for most capital cities, but in many cases the detailed implementation of the policies is carried out by local governments, which have separate responsibilities.

Many policies have wide-ranging effects

In broad terms, while government policies may be directed at specified economic, social or environmental outcomes, they invariably have subsidiary effects. For example, many government policies lead to a redistribution of net income or benefits within the community, irrespective of whether this was the primary aim. In some cases, it is possible for the different components of policy to be quite consistent – for example, taking environmental effects into account in setting prices is also economically efficient. But in practice there are disagreements about how best to achieve environmental objectives, and different economic and social implications will flow from different approaches.

In other cases explicit tradeoffs may be required from the start where, for example, the removal of subsidies can be expected to impose significant losses on particular social groups. There are also instances where explicit policies of governments may have subsidiary objectives, even if they are not highlighted. For example, the pricing policies of some public utilities, while serving their stated objectives of providing services and recovering costs to help finance future expenditures, are partly implemented by way of rates on property values. This results in higher charges for owners of more valuable land, irrespective of usage of the service in question. A redistribution of income or wealth therefore takes

place, and the outcome is different from that which occurs where utilities price according to service usage.

4.2 Economic policy objectives

Urban settlement is influenced indirectly by the economic policy objectives of governments. Aspects of Commonwealth policy which bear on urban development include the macroeconomic environment (fiscal restraint, interest rates), immigration levels, economic infrastructure provision (communications and transport) and intergovernmental financial arrangements.

Policy measures taken for macroeconomic purposes by the Commonwealth Government may not always be consistent with the urban policy objectives of other governments, or indeed with other Commonwealth aims. For example, approaches to macroeconomic management which impact on interest rates can exert a powerful influence on the affordability of housing, although governments may be also striving for lower and more stable housing prices.

At the microeconomic level, many policies are relevant. The current program of microeconomic reform has some potential to affect urban settlement to the extent that it can lead to greater flexibility in product and labour markets and improvements in the competitiveness of Australian industry generally. For example, as part of the program of reductions in protection, tariffs on motor cars are being progressively reduced. This is likely to make them relatively cheaper in the future. Other things being equal, this would result in less reliance on conventional forms of public transport and provide households with more flexibility in their choice of location for living and working and recreation. It may also exacerbate pollution and congestion problems.

Urban developments are, of necessity, undertaken in the context of government budgetary circumstances, and therefore reflect the particular circumstances of the State. For example, the New South Wales Treasury said that economic recession has required disciplines on public sector spending which reduce the ability of governments to provide services for new developments.

State and Territory governments generally aim to encourage economic growth in the major urban areas in their control and to encourage or facilitate some degree of spatial distribution of employment throughout those areas. They try to integrate the creation of employment opportunities with the spread of urban development through the provision of land suitable for commercial activities in developing areas and the provision of suitable infrastructure.

Different approaches are taken. For example, the New South Wales Government has encouraged the development and growth of a second city centre at

Parramatta, while the Victorian Government seeks further development of Melbourne's central business district. At the same time, both are planning for a wider development of employment opportunities within the metropolitan area.

4.3 Social objectives

Governments see a wide range of social objectives as being associated with urban development programs. Affordable housing and public housing for lower income groups are given a high priority. The NHS said that one of its earliest tasks was to make quality housing more affordable, while the New South Wales Department of Environment and Planning (1988) gave as one of its objectives:

... to provide appropriate secure and affordable housing in a variety of types and tenures for all income groups in all parts of the region (p. 55).

There is an increasing tendency for public housing bodies to move away from the provision of designated areas of low cost housing towards spreading public housing through development areas. One objective of this is to reduce the concentration of demands on some types of infrastructure (such as law enforcement and social welfare provisions) in particular areas.

Some governments are directly involved in land development, with the aim of making land more affordable. Most governments also seek to protect the amenity of particular areas through the implementation of planning regulations which are commonly used to separate residential and industrial zones.

Other social objectives include the provision of adequate community services, such as health care, education, public transport, recreational and cultural facilities. All levels of government are involved. For example, the Department of Health, Housing and Community Services said:

The social justice strategy also recognises that a fairer Australia requires fairer cities ... The strategy has been implemented ... through key mechanisms such as wages policy and major reforms of the taxation, social security, education and training, housing, community services and health ... The strategy is directed at "expanding choices and opportunities for people" ... (Sub. 85, p. 3).

4.4 Environmental objectives

Urban development is being considered by governments in the context of both the natural and the built environments. Governments generally have stated objectives which set out the way in which they will try to control the undesirable effects of urban development.

However, questions of cultural and environmental amenity are also involved. For example, on heritage issues the Victorian Government (1992) said:

Historical and cultural assets are as much a part of the urban environment as natural ones. Their economic and intrinsic value both to Melbourne and to regional cities and smaller towns like those in the goldfields is incalculable. Sensitive urban development can help protect them (p. 26).

More broadly, the Perth *Metroplan* summarised the Western Australian Government's view on the environment as being concerned with air and water quality, noise, opportunities for recreation and a low-stress environment.

For some State governments, issues of air and water quality are paramount. The environmental effects of different city forms are hotly debated, although some of the required scientific evidence has not yet been adequately compiled. The most efficient ways of coping with such effects need exploring.

For some problems such as sewage and stormwater runoff, the issue is linked directly to the pricing and institutional arrangements for providing infrastructure facilities and services. For example, some costs of water pollution may be charged on a 'polluter pays' basis through area-specific charges. For other environmental phenomena, where the evidence is subject to more dispute, there is a greater difficulty in identifying efficient solutions. For example, the mobility of air pollution makes location-specific charges difficult to apply.

Governments are aware that the community seeks higher environmental amenity. But they are also aware of the financial costs involved. This is the conundrum facing water utilities in particular. For example, concern has been expressed about the effects of Sydney's urban development on the Nepean-Hawkesbury river system, as likely growth over the next two decades is centred on this catchment. Planned improvements to cope with likely urban growth will cost some \$600 million over the next 10 years, and a large part of the funding will be raised through an environmental levy on all ratepayers. This case is discussed in more detail in appendix F.

The difficulties involved in taking account of environmental concerns in a manner which leads to greater urban efficiency should not be underestimated. Nevertheless much work is being done to tackle such problems, and some progress has been made. Part B and appendix F of this report review the issues.

4.5 Consistency or conflict?

The *Report of the Working Group on the Patterns of Urban Settlement* acknowledged that urban settlement objectives can be thwarted where:

... government policies overlap or are in conflict and where intergovernmental mechanisms are inadequate to resolve differing priorities (p. 2).

Particular difficulties arise when governments seek to achieve a multiplicity of objectives, not all of which are compatible. For example, increasing the density of settlement in particular areas by setting minimum lot sizes may lower costs to public utilities and encourage more intensive use of public transport, health and education facilities. However, such policies may also restrict the choices open to homebuyers, some of whom would be willing to incur greater transport costs in order to enjoy lower land costs or the amenity of a larger block, whether in a fringe development or in an established area.

Moreover, while many governments espouse the benefits of urban consolidation, other policies they implement may give contradictory signals. For example, mass transit public transport is heavily subsidised, often in a manner which can encourage urban dispersal. In both Melbourne and Sydney long-distance fares are more heavily subsidised than fares for travel over shorter distances.

Some councils also subsidise the provision of parking spaces in cities. This provides an incentive for people to use private motor vehicles rather than public transport. It is inconsistent with government policies which subsidise public transport with a view to reducing private motor vehicle usage in cities (IC 1991f, p. 111).

More broadly, any change in the prices of government-provided goods and services is likely to have an uneven impact on the distribution of benefits and costs, and may conflict with the objective of greater affordability of housing, or with a government's broader equity objectives. For example, some of the costs of new urban development are currently borne by the taxpayer, or through cross-subsidies from other users. Changes to urban infrastructure pricing along the lines implied in the terms of reference, and likely to arise under government objectives to make users pay, could increase prices for some prospective new home buyers and lower them for others.

This could conflict with the objective of making housing more affordable. However, to the extent that this reflects the removal of hidden and perhaps unintended subsidies, the result could in one sense be characterised as equitable. This raises fundamental questions about what comprises an 'equitable' outcome. It also raises wider questions about the proper role of those government policies which are intended to alter the distribution of income and wealth.

Many government policies affect the distribution of income and wealth in society, by leading to changes in interest rates, exchange rates, taxes or prices (whether individually or through inflation). They result in equity effects which pull in different ways, and requiring each policy to achieve a desired equity

outcome may well hinder the achievement of the policy's primary objective. For such reasons, it is generally seen as desirable to utilise income tax and social welfare policies to determine how income is shared.

4.6 What is an efficient pattern of urban settlement?

All governments see *efficiency* as an important objective for their cities. The terms of reference ask the Commission to report on policies which:

... reduce the efficiency of land use in urban areas.

But the meaning of efficiency in an urban context was not made clear.

Some calls for greater efficiency are being made on the basis of a perceived need to economise on land and infrastructure usage. Most governments seek to promote urban consolidation – involving infill and higher density housing developments. An important motivation is the limitation on the capacity of governments to fund new infrastructure.

Participants' views

Some participants had strong views as to how our cities, or aspects of them, should be organised and structured. Better utilisation of public transport (and less reliance on cars), better access by particular groups to particular services, and lower environmental damage in urban areas were examples cited.

Newman said:

... it is not possible (economically, environmentally and socially) to continue to build cities around the automobile ... there is a need to manage transport demand, build up public transport and most importantly integrate land use into the upgraded public transport system (Sub. 54, p. 1).

An alternative seen by Newman to the current urban structure is the building up of urban centres, and the creation of 'urban villages' at strategic points as a means of providing for outer fringe areas. Most destinations would readily be reached by walking, while trains would be used to reach many others. The role of the car would be largely relegated to use for some social and recreational journeys.

Growing pressures to solve large scale problems such as congestion mean that people are often forced to accept a limitation on individual rights even if they don't like it (eg simply not taking a car to work because there is no parking) (Newman and Kenworthy 1990).

An efficient pattern of urban settlement was defined by Martin Goff and Associates as:

... one whereby from a very early time in the life of the suburb job opportunities were towards 50 per cent of those people who were living in the suburb who were workers, so that a high [degree of] self-sufficiency in terms of work opportunity would be a hallmark of an efficient urban settlement ... a review ... is overdue so that we are allowed to develop suburbs which are more interesting, more practical, and more economic and thereby more efficient (transcript, p. 732).

Toon, representing the Royal Australian Planning Institute, New South Wales Division, said that what he considered to be an assumption behind the use of the term 'efficient land use' in the reference, which implied a more compact form of urban development, was not necessarily a measure of efficiency. Rather, he thought, the term should be considered as applying to the provision of major infrastructure projects which would have to be implemented in a form which takes into account technical efficiency and economic and environmental costs.

Some participants took a broader view of efficiency. Neutze stated:

An efficient land use is one which maximises the welfare of the producers and consumers of goods and services, taxpayers and owners of assets in the city (Sub. 12, p. 1).

Troy said:

Efficiency is not some end in itself. We can only be concerned with 'efficiency' in the sense that we make the most economical use of resources in securing our social goals. In the case of urban development this means not only optimal use of the land itself in pursuit of those goals but in the location of uses (activities carried out on the land) relative to one another (Sub. 33, p. 1).

The Department of Health, Housing and Community Services argued that the concept of efficiency must take into account the maximisation of economic, social and environmental goals. It said that, while a definition which seeks to maximise such goals:

... equally does not permit specific quantification, it provides a framework to identify the extent to which policies contribute, or retard achievement in each of these dimensions.

It noted the difficulties in costing the importance of external effects, for example to take account of environmental concerns, and sought a more directive role for government:

... [this definition] also appropriately defines the role of government, in its legitimate role of representing the collective preferences of the population as whole, to decide upon the balance to be achieved (Sub. 155, p. 11).

A recent report by the House of Representatives (1992) characterised an efficient economy as a flexible economy which did not create unnecessary impediments to the movement of people between employment centres.

Both costs and preferences need to be accounted for

The difficulty with attempts to prescribe an ideal city form is that efficiency is not just about dollars and cents. The efficiency of urban land use depends both on the costs involved and on the (diverse) preferences within the community. This is a complex equation in which, as many participants have observed, social, environmental and urban amenity considerations all play a part. The Department of Health, Housing and Community Services referred to:

... competing priorities and a wide range of individual tradeoffs which are reflected in a diverse mix of outcomes ... (Sub. 155, p. 9).

The tradeoffs people make – among features such as block or house size, and access to amenities or employment – will be determined by their own preferences and the costs involved, constrained by their budgets. But the extent to which the collective outcomes are *efficient* depends on the wider costs and benefits to society being accounted for, either through the prices people face or, where this is not practicable, through regulatory procedures and constraints. This encompasses a requirement that decisions are not distorted by taxation or other influences.

This approach to efficiency, which the Commission endorses, emphasises *process*, rather than attempting to achieve a specified pattern of urban settlement.

The Sydney Water Board supported the proposition that it is the process by which a city develops, rather than any prescribed form, which will result in the most efficient form of urban settlement. It added:

The form of urban settlement which does eventually result from the application of the correct process will possess greater credibility and implicit endorsement *because* of the correctness of that process (Sub. 150, p. 1, emphasis in the original).

In contrast, Vintila criticised the Commission's approach as placing too much emphasis on what people demand ('consumer sovereignty') without taking account of the desirability of keeping total costs, including the consumption of energy and resources, to a minimum. He said this leads to an inevitable neglect of common resources:

... if we are really interested in the city's efficiency and equity in a deeper sense, then it is total costs which matter most ... our cities are experiencing a wide range of efficiency and sustainability problems related to their characteristically low densities and high levels of car dependence ... (Sub. 158, p. 14).

The Commission agrees that individual decisions about where and how to live will not add up to efficient patterns of urban settlement unless all the costs (and benefits) of such decisions are adequately taken into account – including the 'external' social and environmental effects. While not always practicable, the signalling of such costs through prices and charges for urban infrastructure can make an important contribution to achieving efficient outcomes. The next part of

the report is about the scope for and means of achieving that, as well as the extent to which it is happening.

PART B

URBAN INFRASTRUCTURE
FINANCING AND CHARGING

PART B: URBAN INFRASTRUCTURE FINANCING AND CHARGING

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PART B: URBAN INFRASTRUCTURE FINANCING AND CHARGING

The prices people pay for urban infrastructure facilities and services can be an important influence on the shape of cities – and are a central concern of the Commission’s inquiry. For various reasons, however, price signals for infrastructure are often unclear and, in particular, do not always reflect costs. This part of the report is about those price signals – how important they are, how they affect urban form, what objectives they are trying to achieve, the consequences of changing them, and what impediments there are to a better reflection of costs.

Chapter B1 is about the role of urban infrastructure. It describes the range of infrastructure in our cities and its cost structure. It also considers how infrastructure provision and pricing can affect urban form.

The nature of infrastructure costs is examined in chapter B2. This chapter looks not only at the total costs of pipes and schools and roads, but also at the intangible, but sometimes critical, environmental and congestion costs. The emphasis is on how the capital costs vary with location and with different development densities.

Chapter B3 analyses the charging principles that would promote the efficient provision and use of infrastructure in particular locations. The chapter begins by examining the charging options and the difficulties that arise in trying to make charging locationally efficient, especially when there are other objectives expected of pricing. Also discussed are approaches to allocating the incremental costs of providing infrastructure to particular developments.

Chapter B4 is about the current charging practices in the provision and use of the main forms of urban infrastructure: water, sewerage and drainage (known as ‘hydraulic’), roads, public transport, energy and social infrastructure. It assesses the charging practices for these services against the principles established in chapter B3. The focus of the chapter is on how total costs compare with total payments by households in various locations. For example, is the provision of infrastructure to developments at the fringe subsidised or taxed? Are some fringe developments favoured over others? Are inner city developments discouraged? While the data needed for a definitive answer to these questions is not generally available, some useful insights are gained.

Chapter B5 considers the changes to patterns of urban settlement that different charging arrangements would bring. The implications for equity are also examined.

Finally, chapter B6 examines needed reforms to institutional and regulatory arrangements, including the collection and reporting of locational variations in costs, and private provision and operation of infrastructure.

B1 THE ROLE OF URBAN INFRASTRUCTURE

Urban infrastructure comprises the capital works which allow people to have access to services. It is generally provided by all levels of government and developers. Ownership is generally vested in public authorities.

The provision and use of urban infrastructure are important principally because the investments involved are generally large and 'sunk'. Efficient provision and use require that prices reflect direct and 'third party' costs.

1.1 Introduction

People generally expect to have a range of urban services provided where they live and work. It is now usual – and compulsory in many places – for urban blocks to be sewered, drained, supplied with water and to have access to electricity, a road network and some form of public transport. People want ready access to schools, hospitals, shopping centres and entertainment facilities. They also value clean air and water, and uncongested roads.

The availability of these services contributes to the quality of people's lives. They are important in the range of goods and services from which people choose, and figure prominently in location decisions.

The prices which people are required to pay to obtain urban services can lead to changes in their behaviour. Prices affect their immediate demand for water, waste disposal, and journeys by private and public transport.

Prices may in turn influence the tradeoffs which people make between location, blocks and houses of different sizes, environmental amenity, distance to work, proximity to public transport and so on. For some urban services, households have little direct influence over the type and quality of facilities which are connected to their homes. For other services, people can choose, and the prices charged will affect their choice.

1.2 What is urban infrastructure?

Infrastructure comprises the capital works required in urban areas for households to have access to major economic and social services. The OECD groups infrastructure into two broad categories. In the first category is 'economic' infrastructure, which comprises networked services such as hydraulic facilities, highways and other transport facilities, and energy distribution networks. The

second category, 'social' infrastructure, comprises a broad range of facilities that provide community services such as education, health and leisure, and law and order. Other commentators have used similar definitions.

While the OECD distinction is useful, there are problems in defining boundaries in a rigorous way. Further, as the NCPA noted:

Whilst this definition may be a logical categorisation of infrastructure in terms of its physical characteristics, it is not particularly useful for analysing the appropriateness of funding strategies and charging mechanisms (Sub. 131, p. 4).

According to the NCPA, the 'critical distinction' between different infrastructure types is:

... the extent to which utilisation of infrastructure services should be subsidised in recognition of spillover benefits and/or the redistributive function intended by Government (Sub. 131, p.4).

Major categories of costs

Melbourne Water's classification of the components of its hydraulic system gives a useful overview of the various components of economic infrastructure components.¹ It refers to three categories of works:

- reticulation (minor works within the boundaries of a development);
- distribution works (for example, collection sewers, water supply regional mains and main drains); and
- headworks (for example, dams, major sewage treatment plants and outfalls).

The first category comprises works within the development (or 'on-site'). The second and third categories encompass the 'off-site' facilities which integrate the new development with the network. Figure 1 illustrates how these various components interact for the water and sewerage system of the Sydney Water Board (SWB). The Water Authority of Western Australia (WAWA) provided an indicative breakdown of capital expenditures for hydraulic infrastructure provided to an average sized lot in 'suburban' Perth. They are shown in table 1.

¹ Even within infrastructure systems, there is no agreed nomenclature or categorisation, and there are considerable differences among authorities in how they describe the components of their networks. For example, the SWB defines 'major works' for water supply as including service reservoirs, large mains and water pumping stations, and for sewerage as including trunk sewers, main and branch sewers, and sewage pumping stations (Sub. 70, p. 3). On the other hand, the WAWA defines 'major works' for water supply as including dams and major seasonal water storages, treatment facilities and aqueducts, service reservoirs, large mains and water supply pumping stations, and for sewerage as including major sewage treatment plants and outfall works, trunk sewers, main and branch sewers, pumping stations and interim treatment plants (Sub. 58, p.9).

Table 1: Capital expenditures on hydraulic infrastructure in 'suburban' Perth, 1991 (\$ per lot)

<i>Infrastructure type</i>	<i>Capital expenditure</i>
Water	
Reticulation	1 955
Long service	149
Headworks	5 646
Total	7 750
Sewerage	
Reticulation	2 811
Headworks	3 150
Total	5 961
Drainage	
Local drainage	1 665
Arterial drainage	309
WAWA drainage headworks	1 080
Flood mitigation and river maintenance	33
Total	3 087
Total hydraulic	16 798

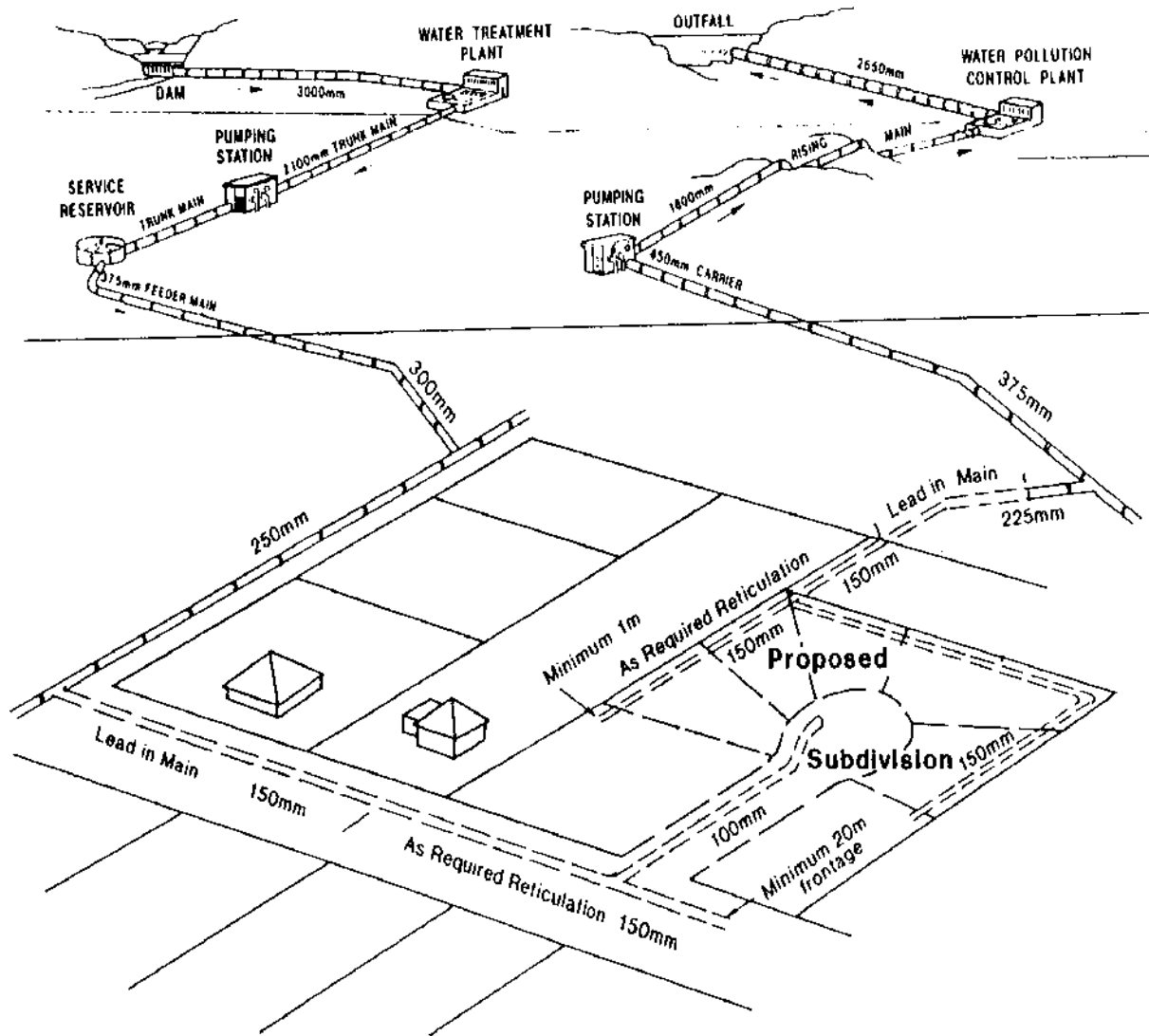
Note: Headworks are defined by the WAWA as follows: for water supply, it includes dams and major seasonal water storages, treatment facilities and aqueducts; for sewerage, includes major treatment plants and outfall works; and for drainage, includes larger coastal discharge facilities, compensating (retarding) basins and nutrient stripping ponds serving the whole catchment. Long service is the pipe that connects the development to the other side of a road.

Source: Derived from WAWA 1991.

In principle, a similar categorisation could be used for other types of networked services such as energy supply, telecommunications and even roads.

Some idea of the relative importance of different forms of economic and social infrastructure can be seen from table 2 which draws on the same source of information as in table 1, but for all infrastructure types. The table shows local reticulation or on-site capital costs together with costs incurred above the subdivision level in 'suburban' Perth. Clearly, the costs of providing hydraulic infrastructure, energy supply, roads and education facilities are significant.

Figure 1: Components of water and sewerage systems



Source: SWB.

Table 2: Capital expenditures on different types of infrastructure for a fringe lot in 'suburban' Perth, 1991 (\$ per lot)

<i>Infrastructure item</i>	<i>On-site costs^a</i>	<i>Off-site costs^b</i>	<i>Total</i>
Economic infrastructure:			
Water supply	2 104	5 646	7 750
Drainage	1 665	1 422	3 087
Sewerage	2 811	3 150	5 961
Water resource management	-	74	74
Roads	3 423 ^c	3 266	6 689
Electricity and gas	3 414	3 947	7 361
Telecommunications and post	1 039 ^d	2 649	3 688
Transport		1 922	1 922
Total	14 456	22 076	36 532
Social infrastructure:			
Education	-	6 678	6 678
Recreation	-	761	761
Community health	-	862	862
Welfare	-	445	445
Total	-	8 746	8 746
Total	14 456	30 822	45 278

a The developer generally has responsibility for providing on-site works. With exceptions, all costs presented in this column, therefore, represent the costs to the developer. For example, electricity costs are partly financed by the developer while gas costs are not borne by developers at all. The costs do not include financing costs.

b Part of these costs are also provided by the developer. For example, water headworks costs of \$1 882 per lot are provided by developers.

c Includes local roads, traffic control facilities, dual use paths and footpaths.

d Telecommunications only.

Source: Derived from WAWA 1991.

1.3 Who provides urban infrastructure?

Agencies of all levels of government, developers and other private providers are involved in infrastructure provision in urban areas (see box 1).

The respective roles of public authorities vary from State to State. In Sydney, hydraulic services for most of the metropolitan area are largely handled by a State authority – the SWB – although some local councils in fringe areas have this responsibility. In contrast, water supply and sewerage infrastructure provided in Queensland are the responsibility of the 134 local councils, each of whom may determine its own policies.

Box 1: Who provides urban infrastructure?*Hydraulic services*

The responsibility for the construction and maintenance of hydraulic infrastructure largely rests with State and Territory GBEs. Developers undertake on-site works and, in some cases, off-site works. Once on-site works are completed, responsibility for their maintenance transfers to the relevant public authority.

Roads

Responsibility for roads is shared among governments: the Commonwealth's responsibility extends to roads of national importance, such as the National Highway System; State governments are responsible for arterial roads servicing state needs and, in some cases, local roads; and local government is responsible for most local roads.

Developers may directly undertake on-site road works. For example, in Western Australia, developers generally build or fund all access roads and 'local distributors' (that is, roads which carry traffic within a cell, and which link 'district distributors' at the boundary to access roads). Once road works are completed, ownership and responsibility transfers to the local council.

Public Transport

Public transport is generally provided by State and Territory GBEs and, to a lesser extent, by local councils and the private sector (for example, bus services are often contracted out). The provision of taxi services is typically undertaken by licensed private operators coordinated by a small number of private sector firms. The taxi industry is subject to extensive State government regulation with regard to the number of taxi vehicles and drivers; taxi vehicle quality; the operation of taxis (for example, in Sydney, regulations govern where and when a taxi may operate); and fares.

Energy

Electricity infrastructure is provided largely by State and Territory GBEs, although local councils have some responsibilities (for example, Melbourne City Council).

In contrast, the provision of gas infrastructure to domestic customers is largely undertaken by the private sector.

Social infrastructure

Social infrastructure covers education facilities, hospitals, police and fire stations, community centres, and parks. It is usually provided by governments. There is now an expectation in the community that social infrastructure will be provided in or made available for new developments. Partly in response, developers have begun to provide some social infrastructure on their developments as a selling point. For example, one of the major selling points of the Golden Grove development is the availability of educational facilities.

Public authorities differ in their commercial orientation. Some services like water and energy are often provided by government business enterprises (GBEs) which aim to achieve a rate of return on assets. Other services such as public transport and most social infrastructure are subsidised from State taxes, local council rates and similar measures.

The Commonwealth Government and some State governments are encouraging greater private provision through the publication of investment guidelines and revisions to income tax legislation.

On-site versus off-site

Private land developers provide most of the infrastructure contained within the boundaries of the development. For example, developers usually provide reticulation of water and sewerage systems, local surface drainage works, neighbourhood open space, and local roads and traffic works (NHSa 1991, p. 12).

There are some cases where public authorities rather than developers provide on-site infrastructure. For example, electricity reticulation in South Australia and gas reticulation in Victoria and Western Australia are provided by authorities (NHS 1991d, p. 66).

Off-site infrastructure is generally provided by public authorities. In some cases, developer contributions are sought. This may take the form of developers providing the infrastructure or paying a financial contribution to authorities.

Ownership of urban infrastructure

Ownership of infrastructure is generally vested in public authorities. Where there is private provision of infrastructure (in the form of developer contributed assets), ownership and, hence, responsibility for asset maintenance and replacement usually transfers to the relevant public authority. For example, local roads are built by private developers but are then almost immediately taken over and maintained by local councils. In other cases, such as tollways and the Sydney Harbour tunnel, the asset reverts to the relevant public authority after an agreed time (say 30 years).

Nevertheless, there are cases where the ownership of the infrastructure remains in private hands (for example, some private hospitals and schools fall into this category).

1.4 Why is urban infrastructure important?

The provision and use of any form of infrastructure are important in a number of respects:

- The investments involved are generally very large.
- The costs are usually ‘sunk’. Once the infrastructure is provided it is difficult or impossible to find alternative uses for it (for example, in the case of a dam).
- Asset lives are generally long. This means that planning periods with regard to the use of the asset are also long.
- The services which the infrastructure provides are often major inputs into a wide range of other industries and activities.
- Some forms of infrastructure and services (for example, schools and hospitals) are important local employers.
- The provision of one type of infrastructure can have an impact on other types. For example, the provision of road and rail links will influence the pattern of demand for social infrastructure and services.

In its response to the draft report, the DHHCS said that infrastructure was important in ‘determining access to employment, education and services’ and the ‘physical structure of networked infrastructure in essence can “lock in” physical patterns of land use and detract from flexibility’ (Sub. 155, p. 12).

To give an indication of the annual expenditures in some areas, table 3 presents public sector expenditure on engineering and building activity (including construction, alterations, improvements and renovations) in 1988-89. The information is somewhat dated, and it is not clear how much relates to infrastructure (although presumably most of that funded by local government falls into that category). Nevertheless, the table gives a general indication of the size of the expenditures involved. It shows that the largest construction outlay across all governments was about \$3.8 billion spent on roads (equal to about 1 per cent of gross domestic product in that year). Of this, \$2.3 billion was spent on construction of new roads and \$1.4 billion on repair and maintenance of existing roads.

In contrast, there is very little information available on the ‘stock’ of urban assets, although attention is increasingly being given to the valuation of public sector assets. South Australia, for example, has valued its public sector infrastructure at a current replacement cost of about \$29 billion. Water, sewerage, and electricity assets comprise the largest groups, but other areas are very

significant. The stock of public housing, for example, is valued at \$3 billion, with schools and colleges at \$2.8 billion (Blandy and Walsh 1989, p. 71).

Table 3: Public sector enterprises undertaking construction activity, by level of government, 1988-89 (\$million)

<i>Item</i>	<i>Local</i>	<i>State</i>	<i>Commonwealth</i>	<i>Total</i>
Engineering				
Roads, highways, subdivisions and bridges	865	1 387	97	2 349
Railways/tramways		288	31	319
Harbours	2	93		95
Water storage and supply	132	491	25	648
Sewerage and drainage	174	511	20	705
Pipelines (other)	5	137	16	158
Electricity supply	228	1 314	40	1 583
Telecommunications	a	25	1 900	1 925
Landscaping and recreation	98	50	38	185
Heavy industry	3	82		85
Repair and maintenance:				
roads	780	622	34	1 436
other	371	2 628	1 070	4 069
Total	2 658	7 629	3 269	13 556
Building				
Residential	11	768	74	853
Offices, shops, other premises	115	1 458	1 196	2 769
Educational	28	884	95	1 007
Health	9	391	18	418
Entertainment/recreational	82	114	10	206
Repair and maintenance	114	1 090	552	1 757
Total	359	4 705	1 946	7 010
Grand total	3 017	12 335	5 215	20 567

a Local government expenditure on telecommunication was less than \$500 000.

Note: Totals may not add due to rounding.

Source: ABS, *Public Sector Construction Activity, Australia, 1988-89*, cat. no. 8775.0, table 5.

Some States now require that their public authorities value all assets under their control. This should lead to a better understanding of the real costs of owning and operating facilities, and of the long-term implications of greater or lesser expenditures on maintenance and retrofits.

1.5 What is efficient provision?

Where feasible, prices for the urban facilities and services provided to any particular user should be set in a way that avoids either under-use or over-use. This will not be achieved if prices are set above or below the real cost of providing them (including a normal rate of return on assets and an allowance for any environmental side-effects).

For example, if developers or households are charged more than the facilities or services cost to provide, then some will choose not to use them, or will use less, even though they might be willing to pay the real costs involved. In cases where the facilities or services are compulsory, they may have to take less of something else – say, a smaller block of land or a less preferred location.

Inefficiency also occurs if services are priced at less than the real cost – here there is an incentive for waste and overuse. Some argue that roads and some aspects of the environment such as clean air and water fall into this category. For example, Newman and Kenworthy (1989) argue that roads have been too readily provided, and the use of roads and motor vehicles is not constrained by the congestion and pollution costs they impose on cities.

Efficient patterns of settlement are more likely to emerge if differences in the costs of location by region or neighbourhood are taken into account by people deciding where to live (see chapter A4). If people are offered developed land at its real cost to society, then they can decide for themselves whether those costs are justified by the attraction of the site.

For some forms of infrastructure, such as schools, hospitals and police stations, services are rarely charged directly to users, so prices cannot guide investment or location decisions. Nevertheless, costs and benefits still need to be assessed.

Institutional arrangements may also need to be addressed in order to improve the efficient provision of infrastructure.

Direct costs need to be attributed properly

An important and obvious influence on the provision of infrastructure is topography. This will heavily influence the initial financial costs of providing roads, hydraulic and any other underground infrastructure, and will also determine costs over time that flow from the use of the infrastructure, such as operations and maintenance.

Costs are also affected by what facilities are already in place. For example, when infrastructure assets such as dams, arterial roads or sewer mains already exist and new development places no significant strain on their capacity, the additional

cost of providing services to a development may be limited to those associated with local reticulation.

Private schools and hospitals fall into a separate category. The level of resources provided and charges to users are determined within the context of their relationship with public providers. Charges to individuals may, on occasion, be subsidised out of general revenues.

‘Third party’ costs can be important

There are also third party costs to consider, such as loss of amenity, increased air and water pollution, and traffic congestion. Potential environmental damage is a major concern in designing and operating hydraulic systems. Public health costs arising from polluted waterways are also relevant. (Appendix F contains a detailed discussion).

These costs can be significant. For example, a new fringe development may generate pollution or traffic congestion in other parts of the city, or lead to increased demands on public transport routes into the central business district.

Third party costs are usually accounted for either indirectly or not at all, but they can vary significantly according to where the development is located. Moreover, determining their importance is not straightforward because, unlike private goods and services (where prices paid give some indication of how they are valued), there is no spontaneous market mechanism for valuing increases or reductions in air or water pollution or traffic congestion.

Regulatory approaches to account for third party costs are often used and these are discussed in various parts of this report. For example, standards are often imposed to control environmental costs (see appendix F). Similarly, regulation can be used to ensure that other third party costs such as might occur in the area of public health are controlled (see part D).

B2 COSTS

The costs of providing urban infrastructure and services vary significantly from location to location. Important influences are differing terrain and third party (for example, environmental) costs. The density of development also has an impact on per unit development costs. When there is genuine excess capacity already existing, its use can reduce outlays on settlement compared with the costs of providing new infrastructure.

How infrastructure costs (including capital outlays and third party costs) vary within cities – by location or with housing density – is of particular importance to the influence of infrastructure charging on the pattern of urban settlement. This chapter looks at the available evidence.

A number of participants have pointed to infrastructure cost differences between cities, particularly between regional and capital cities. They have urged the Commission to explore these differences in greater detail. However, as these differences are of greater relevance to the distribution of population across Australia than to patterns of settlement within cities, they are only briefly dealt with here. The issue of infrastructure cost differences between cities is more relevant to the Commission's concurrent inquiry on impediments to regional industry adjustment.

2.1 Locational cost variation

The costs (including capital outlays) of providing infrastructure and services to new residents in different areas within cities may vary for a range of reasons, including the geographical and topographical features of the district or the individual site, the proximity of developments to existing infrastructure, and the capacity of existing infrastructure (see boxes 1 and 2). The varying design lives of infrastructure in different locations can also be important.

Box 1: Sewerage and drainage costs*Costs vary with location*

Sewerage and drainage costs vary considerably by location. Melbourne Water, for example, provided information about indicative capital outlays of providing off-site sewerage infrastructure (including interim works) in Melbourne: they vary from \$500 per lot in Werribee to \$3100 per lot in Craigieburn (Sub. 40, p. 18).

Costs vary according to the differing terrain and the processes used to treat waste water. In Sydney, there are basically two sewage treatment systems, and they vary dramatically in cost. Depending on location, sewage is either treated to the primary stage and discharged into the ocean or, as is typically the case for fringe development, tertiary treated (plus nutrient scrubbing in some cases) and released into the Nepean-Hawkesbury river system. The second process involves operating costs ranging from \$0.80 to \$3.00 per kilolitre, compared to between \$0.11 to \$0.15 per kilolitre for the first process.

Higher environmental standards mean higher costs

There are increasing concerns about runoff and discharge into inland rivers and the ocean. Urban stormwater runoff may contain heavy metals, nutrients, grease and suspended solids. In Sydney, the community will no longer accept traditional methods of ocean outfall disposal.

These concerns have created pressures for higher standards of waste water disposal, which has implications for the costs of providing infrastructure. The SWB said that in order to meet increasingly stringent environmental standards:

... more extensive and usually more expensive solutions will generally be required to respond to the problems of water pollution and sewage collection and treatment (Sub. 70, p. 11).

While reducing pollution costs in western Sydney is expensive, retrofitting ocean outfalls is costly too. Some retrofits are already being planned. The SWB is also investing in treatment and sludge removal, and investigating alternative methods for waste disposal off-site: these actions will greatly increase the costs of ocean outfall disposal.

Monitoring waste water discharges can be costly too

Monitoring discharge and ensuring compliance with waste water discharge standards is expensive if done intensively, as it is difficult to determine who is discharging what into the sewerage and drainage systems.

Attempts have been made to monitor discharges. For example, the SWB has agreements with some 2500 dischargers of trade waste water (SWB 1991a). The agreements specify allowable quantities and, in effect, concentrations of discharge. However, it may be less environmentally and administratively costly to prevent effluents from entering the drains and sewerage system in the first place, and the trade waste charging system is intended to do that.

Several studies have been undertaken in recent years to identify the costs of providing infrastructure and how they vary between locations, including between developments at the fringe and inner areas within capital cities.² Comparable information about costs in regional cities is very limited.

Most of the studies focused on the initial *capital costs* (that is, outlays) of providing infrastructure and ignored the *recurrent costs* (that is, annual expenditures) associated with use of the infrastructure.³ The focus on outlays may mean that, in some cases, the attributable costs of existing capacity have been neglected (see chapter B3 for a discussion about cost allocation).

While these studies are not readily comparable, they usefully illustrate why the differences in the costs of infrastructure arise between development areas. For example, a study by the AIUS (1989) shows how capital outlays of infrastructure provided by Victoria's State authorities for the Plenty corridor compared with the average for fringe development in Melbourne. Table 1 shows that outlays on public transport and roads are significantly greater for the Plenty corridor than for average fringe development, because of the provision of fixed rail services and major transport interchanges.

The AIUS also estimated that the total capital outlay of providing water distribution infrastructure to the Werribee corridor in Melbourne was 2.6 times greater than for the Berwick corridor (AIUS 1989, p. 10). For the Plenty corridor, total capital outlay was 1.7 times greater. Moreover:

Virtually all agencies reported lower costs in the south east either as a result of proximity to established infrastructure (e.g. fixed rail services, hospitals, water, sewerage, roads), or due to more favourable geology and topography for underground services (e.g. telephone, gas, power, hydraulic services) (AIUS 1989, p. 2).

The AIUS noted that lower initial capital outlays for extending sewerage systems and railway lines into the south-east of Melbourne were partly offset by higher recurrent costs arising because of the topography (AIUS 1989, p. 2).

² See, for example, Neilson (1987) for Melbourne, Hughes Trueman Ludlow et al (1991) for Sydney, AIUS (1989) for Melbourne, Birrell and Tonkin (1991) for a comparison of Perth and Sydney, Voran (1992) for Perth, Newman, Kenworthy and Vintila's study of Perth for the NHS (1992b), Sinclair Knight (1993) for Brisbane, and Stephenson et al (1991) for Hobart. See also submissions by State governments and GBEs: the Australian Capital Territory Government, for example, undertook its own study of the respective costs of fringe and consolidation developments as an adjunct to its recently released draft *Territory Plan* (Subs. 63 and 71).

³ Public authorities distinguish between capital costs and recurrent costs for the purpose of preparing their annual budgets. This demarcation of costs will be referred to in the remainder of part B. The economic concept of capital costs is quite different and means the costs of servicing debt and equity.

Table 1: AIUS: indicative capital costs incurred by State authorities for infrastructure provided to the Melbourne fringe, 1989 (\$ per household)

<i>Infrastructure</i>	<i>State authority</i>	<i>Average fringe costs^a</i>	<i>Plenty corridor costs^b</i>
Water	Melbourne Metropolitan Board of Works	2 820	1 680
Sewerage	Melbourne Metropolitan Board of Works	2 490	1 940
Drainage	Melbourne Metropolitan Board of Works	550	550
	Dandenong Valley Authority	956	753
Roads	Road Construction Authority	1 455 ^c	18 106
Public transport	Met	1 230	5 851
Gas	Gas and Fuel	1 500	2 200
Power	State Electricity Commission	2 520	2 540
Telephone	Telecom	1 850	1 850
Health	Health Department	1 100	1 100
Education	Education Department	5 729	5 729
Community services	Community Services Victoria	440	455
Total		22 640	42 754

a Where average costs was available they were used, the Melbourne Metropolitan Board of Works (now Melbourne Water) developer contributions were not deducted. Otherwise Plenty corridor estimates were used which may overstate average costs. Where a range was provided a midpoint was adopted.

b The lowest cost corridor form was adopted unless a particular cost typified servicing costs over the majority of the corridor.

c Based on existing arterial road upgrading funding which substantially understates long term costs generated.

Source: AIUS 1989, p. 19.

As part of a study comparing the costs of providing infrastructure to developments in Perth and Sydney, Birrell and Tonkin (1991) looked at the capital outlays incurred in providing infrastructure for three new developments on the fringes of Sydney – Rouse Hill, South Creek, and Macarthur South. According to their study:

- Costs per lot for Rouse Hill are higher than for Macarthur South and South Creek because the area has little infrastructure in place, and high effluent standards are required because it drains into the Nepean-Hawkesbury river system.⁴

⁴ A tertiary level sewage treatment plant is proposed and Rouse Hill dwellings will have dual water systems installed, with treated effluent used in one of them.

- South Creek has the highest cost of public transport because of the construction of a railway through the area to link the Badgerys Creek airport with the existing Sydney rail network. Its road costs are lowest because arterial roads were already in place.
- Macarthur South has high hydraulic costs compared with South Creek largely because of difficult terrain (pp. 25-7).

Voran undertook a cost-benefit analysis of development in three case study areas in Perth – Redcliffe (an inner area); Maddington (a middle fringe area); and Armadale (an outer fringe area) – and found that significant differences in infrastructure costs occurred between locations primarily because of the differences in outlays required on hydraulic infrastructure. However, it was noted, that the recurrent costs of providing infrastructure were very similar across areas (Voran 1992, p. 13, p. 198).

Voran also extended the analysis to 19 other areas in Perth and found that there was a notable increase in the cost of infrastructure as the distance increased beyond about 13 kilometres. Voran commented, however, that this may be a reflection of the assumptions made in applying the model (pp. 9-10).

Infrastructure costs within regional cities also vary with location. Information from the City of Bendigo suggests that there is considerable variation in indicative capital outlays for sewerage infrastructure within Bendigo with costs per lot ranging from \$120 per lot (Jackass Gully) to \$1670 per lot (Kangaroo Flat) in the Greater Bendigo Urban Area and peripheral urban growth areas of Bendigo (Bendigo Sub-Regional Committee of the Loddon Campaspe Regional Planning Authority 1992, p. 9).

It is not only the financial costs of infrastructure provision that vary with location in cities. Third party costs such as congestion, air, noise and water pollution can also vary in this way (see appendix F, and boxes 1 and 2). Newman and Kenworthy (1991) examined the greenhouse impacts of transport provision and use in Perth and estimated that in the fringe areas of the northern corridor of Perth around 3.56 tonnes of carbon dioxide per person annually are generated while in Fremantle, a person generates 1.32 tonnes. The cost implications of this are by no means clear (see the Commission's report (1991d) on *The Costs and Benefits of Reducing Greenhouse Gas Emissions*).

2.2 Developments in new areas

Table 2 summarises the results obtained from some recent studies which attempted to estimate capital outlays of providing infrastructure to certain fringe developments. At face value, they indicate substantial variation within and between cities in both economic and social infrastructure. Unfortunately, most of the studies are not directly comparable, for a number of reasons:

- Some looked only at costs to public authorities, or to developers, while others looked only at off-site costs (see table footnotes).
- Assumptions about cost allocation, average lot sizes, densities and the localities chosen for study also affect the estimates.
- In addition, items included in both the infrastructure categories vary from study to study. For example, the main reason why the Hughes Trueman Ludlow et al estimate for capital expenditure on economic infrastructure in Rouse Hill is much lower (\$28 026) than the EPAC estimate (\$56 205) is that the former excluded costs for main roads, local government and public transport, while the Birrell and Tonkin estimate (\$36 623) includes only the costs incurred above the subdivision level.

Caution is, therefore, required when interpreting table 2. It is merely a presentation of the results of the various studies and the Commission neither endorses them nor intends that they be compared with each other.

Several studies have compared infrastructure costs between cities using a common methodology. For example, Birrell and Tonkin undertook a comparison between Perth and Sydney. They considered that, compared with Sydney, the capital outlays of providing infrastructure in Perth are lower and are likely to remain so. The flat, sandy terrain of Perth's coastal plain makes engineering works for water and sewerage facilities and road construction relatively inexpensive. The porous nature of the soil means that septic tanks can be used. However, in the south-east of Perth, the aquifer is close to the surface and, hence, sewerage provision is difficult (Birrell and Tonkin 1991, pp. 11-12).

Table 2: Summary of study findings on the capital costs of providing infrastructure to fringe areas

<i>Area</i>	<i>Economic infrastructure \$ per lot^a</i>	<i>Social infrastructure \$ per lot</i>	<i>Year of dollar values</i>	<i>Source</i>
Sydney				
Rouse Hill ^b	28 026	not estimated	1989-90	Hughes Trueman Ludlow et al (1991)
Rouse Hill ^b	56 205	15 310	1988	EPAC (1991)
Rouse Hill ^b	58 100	15 300	1988	SWB Sub. 70
Rouse Hill ^c	36 623	15 362	1988	Birrell and Tonkin (1991)
Erskine Park/St Clair ^b	26 410	not estimated	1989-90	Hughes Trueman Ludlow et al (1991)
South Creek ^c	26 095	7 035	1990	Birrell and Tonkin (1991)
Macarthur South ^c	33 572	8 870	1990	Birrell and Tonkin (1991)
Perth				
'suburb in Perth'	32 575 ^d	8 746 ^c	1991	Birrell and Tonkin (1991)
'outer suburban developments'	34 473	8 563	1990	Department of Planning and Urban Development Western Australia Sub. 49
Armadale ^e	19 658	30 076	1991	Voran (1992)
Maddington ^e	17 623	34 415	1991	Voran (1992)
Melbourne				
Plenty Valley, Berwick and Werribee ^f	15 371	7 269	1989	AIUS (1989)
Plenty corridor ^f	35 470	7 284	1989	AIUS (1989)
Werribee ^e	31 900	10 000 to 15 000	1988	EPAC (1991)
Canberra^b	28 513	7 298	1992	Australian Capital Territory Government Sub. 63
Hobart				
Kingborough, Latrobe, Westbury ^f	16 742	2 841	1991	Stephenson et al (1991)
Albury-Wodonga^b	30 050	950	1992	AWDC Sub. 29
Brisbane				
Taigum ^g	26 100	6 600	1992	Sinclair Knight (1993)
Rochedale ^g	22 300	6 200	1992	Sinclair Knight (1993)
Ormeau ^g	26 000	12 000	1992	Sinclair Knight (1993)

a The studies make different assumptions about average lot size and density. Sometimes costs are in terms of per household or per dwelling.

b Cost of infrastructure provided by public authorities and by developers.

c Cost of infrastructure provided 'above the subdivision level'.

d Cost of infrastructure provided at and above the subdivision level.

e Cost of publicly provided infrastructure excluding local government grants. Public transport is included in economic infrastructure.

f Cost of infrastructure provided by State authorities.

g The present value of cost of infrastructure provided by public authorities and by developers. Represents the costs associated with a 'base case' development (that is, current standard and density for the site or similar sites). Transport is included in economic infrastructure.

Some information was also provided by participants comparing the infrastructure costs in regional cities with capital cities. The City of Bendigo estimated that the debt per head of population for Melbourne Water was higher than that for the Coliban Region Water Authority (which services Bendigo) and considered that this revealed a cost advantage for Bendigo (Sub. 116, p. 11). However, this could also reflect the authorities' differing charging policies and, hence, differing cost recovery rates.

In addition, the Albury-Wodonga Development Corporation (AWDC) provided a comparison of its infrastructure capital outlays with those of Sydney, Melbourne and Perth. This suggests that costs were apparently much lower in Albury-Wodonga in 1992 than in outer metropolitan suburbs in 1988 or 1990 (see table 2). Major areas of difference were off-site costs such as main roads and public transport.

2.3 Development in areas already serviced by infrastructure

Behind the general support by governments for policies to promote urban consolidation are assessments that higher density cities are more economical in their use of infrastructure. 'Consolidation' refers to a process of raising density of cities through redevelopment or infill – which can draw on existing infrastructure – as well as through higher density housing generally.

The costs of servicing redevelopments or infill developments in inner areas depend on the capacity of existing infrastructure. Judgments need to be made about whether the existing infrastructure can accommodate an increase in load, about the physical condition of the existing infrastructure, and about the capital and recurrent costs of upgrading or replacing service capacity.

Where existing infrastructure can cope adequately with additional demands generated by redevelopment or infill, the apparent costs of adding new users to the network could be expected to be low compared with fringe development. For small projects involving only localised increases in density, there will generally be little need for major additional expenditures on roads, hydraulic infrastructure, public transport, and social infrastructure, which together comprise a large part of the cost of infrastructure in fringe areas.

However, existing capacity has clearly been produced and sustained at some cost; it is not free. Full utilisation of capacity is often planned but occurs some time after initial provision. As capacity is 'consumed' over time, the costs should be recognised and attributed (chapter B3 is concerned with how this may be done).

Some studies

In recent years, there have been a number of studies attempting to quantify the relative merits of urban consolidation. Many have examined the comparative capital outlays of providing infrastructure and services to inner and fringe developments. Some have taken a broader view, looking at all the costs and benefits of different development options.

Cost savings analyses

Studies that have taken a cost savings approach to urban consolidation proposals have generally examined the savings accruing from infrastructure provision alone. Often the main objective has been to assess savings in public sector outlays, because of concerns by authorities about the budgetary consequences of providing infrastructure to fringe developments.

Most studies have concluded that there are substantial savings to be had from urban consolidation. Some of these studies are reviewed below. The studies are not comparable because of the site specificity of the data used, and the differences in methodologies and assumptions made about infrastructure costs and existing capacity.

- *Australian Capital Territory Government (1992)*

The Australian Capital Territory Government examined the respective costs and benefits of relying more heavily on 'greenfields' or consolidation in established areas to accommodate growth (Sub. 63, pp. 25-33). While benefits were considered, the Government's analysis focused mainly on the savings in outlays accruing from consolidation.

The greenfields option assumed that over the next five years development in Gungahlin would accommodate 2500 households per year and infill and redevelopment accommodate 500 per year. The urban consolidation option assumed that greenfields development was slowed to 1500 households per year and infill and redevelopment increased to 1500 per year (1000 below the current level) over the next five years. The urban consolidation option involved higher density housing compared with the greenfields option (transcript, p. 1067). The outcome of the comparison is shown in table 3.

Table 3: Australian Capital Territory Government: comparison of 'greenfields' and urban consolidation options over five years for Canberra, 1992 (\$ million)

	<i>Greenfields option</i>	<i>Consolidation option</i>	<i>Savings</i>
Capital costs			
Electricity, water & sewerage	Neutral	Neutral	-
Public transport	8.7	6.6	2.1
Community facilities	88.0	53.0	35.0
Open space	Neutral	Neutral	-
Arterial roads, ponds, estate access, etc	76.0	55.0	21.0
Total capital costs	172.7	114.6	58.1
Operating costs			
Public transport	7.1	5.5	1.6
Community services			
schools	39.6	36.9	2.7
fire stations	2.0	-	2.0
Open space	6.3	6.3	-
Maintenance	Neutral	Neutral	-
Total operating costs	55.0	48.7	6.3
Government revenues			
Sales	158	135-185	-23/+27
Total revenue	158	135-185	-23/+27
Community benefits			
Access to facilities	Limited	Immediate	Positive
Travel time	Increases with development	Depends on location of redevelopment/infill	Expect to be reduced

Source: Australian Capital Territory Government, Sub. 63, p. 33.

The Australian Capital Territory Government said that a decline in average household size in the older urban areas has resulted in an increasing under-utilisation of community facilities and other infrastructure. It noted that:

If [consolidation] developments occur in areas with sufficient spare capacity, then these developments would result in cost savings compared with greenfields developments. Should such a development trigger the need for significant augmentation, then infill development could result in additional capital cost (Sub. 63, p. 28).

It concluded that with greater urban consolidation it could defer over \$58 million in capital expenditure over the next five years, and would save over \$6 million in recurrent costs over the same period. It noted that the two major areas of savings in outlays to the public sector are roads and community facilities.

- *Hughes Trueman Ludlow (1991)*

In a widely cited study, Hughes Trueman Ludlow et al (1991) estimated the total (including public sector) capital outlays of providing economic infrastructure to fringe developments in Erskine Park/St Clair and Rouse Hill and in potential urban consolidation sites in Bankstown and Hurstville in Sydney. In the latter sites, as there were no public sector capital outlays required, the estimated total capital outlays were taken to be equivalent to developer costs. Social infrastructure was not included in the study.

Table 4 presents their estimates of the differences in total costs for selected developments of different densities. On the basis of these estimates, Hughes Trueman Ludlow et al concluded that there were substantial savings in total capital cost outlays from the provision of economic infrastructure for urban consolidation compared with fringe development. They said the reason for consolidation being cheaper is that infrastructure services were already in place (Hughes Trueman Ludlow et al 1991, pp. 82-83). Most of the total capital outlays for urban consolidation involved connection to existing services, although some augmentation of sewerage and telecommunications network would be required at higher densities. Further discussion of the cost savings from increases in density considered in section 2.3.

Table 4: Hughes Trueman Ludlow: differences in total capital costs of economic infrastructure between consolidation and fringe development in Sydney, 1989-90 (\$ per dwelling)^a

<i>Fringe:</i>	<i>840m²lot (Rouse Hill)</i>	<i>840m²lot (Rouse Hill)</i>	<i>450m²lot (Rouse Hill)</i>	<i>450m²lot (Rouse Hill)</i>
<i>minus</i>				
<i>Consolidation:</i>	<i>50 dwellings per ha (Hurstville)</i>	<i>18 dwellings per ha (Bankstown)</i>	<i>50 dwellings per ha (Hurstville)</i>	<i>18 dwellings per ha (Bankstown)</i>
Infrastructure component:				
Water	8 422	7 752	4 551	3 881
Sewerage	4 171	3 601	3 411	2 841
Stormwater	7 276	7 276	3 898	3 898
Gas	1 753	1 492	1 369	1 108
Power	2 248	2 152	1 885	1 789
Telecom	1 031	795	659	423
Local roads	4 635	4 635	2 483	2 483
Miscellaneous ^b	1 148	1 148	615	615
Total savings	30 684	28 851	18 871	17 038

a Hughes Trueman Ludlow et al preferred to use a measure of net dwelling density. They defined this as dwellings per hectare of housing land or of site area. They distinguished this measure from gross dwelling density which is based on the neighbourhood area which includes roads, schools and other local facilities. Under consolidation: 15-35 dwellings per hectare represents dual occupancy; 25-40 dwellings per hectare, villas; 35-45 dwellings per hectare, villa/townhouses; 50-120 dwellings per hectare, other medium density, low rise; 80-150 dwellings per hectare, medium to high density, medium to high rise. The lot sizes for the fringe development options are roughly equivalent to 12 dwellings per hectare (840m²) and 22 dwellings per hectare (450m²).

b Refers to incidental site works incurred at the fringe.

Source: Hughes Trueman Ludlow et al 1991, p. 66.

- *Newman, Kenworthy and Vintila (1992)*

Newman, Kenworthy and Vintila (in NHS 1992b, pp. 141-152) compared the public and private sector transport costs associated with developing 1000 new dwellings at the fringe of Perth with the costs of developing 1000 new dwellings in Fremantle (as a representative inner city development). Their analysis included the costs incurred by non-residents and residents (that is, capital and operating cost of cars, cost of parking, time cost of different transport modes, capital cost of roads, capital and operating costs of public transport) and costs imposed on the community as a whole (for example, the cost of fatalities and pollution).

They found the total present value of transport cost savings from inner development to be \$87 079 000 (or \$87 079 per dwelling). It would appear that total transport costs associated with inner and fringe development is mainly

incurred by the private sector (over 80 per cent for the inner city and about 98 per cent for the fringe).

Much of Newman, Kenworthy and Vintila's estimate of transport savings reflects costs which are borne by individuals. Hence, their estimate does not reflect inappropriate pricing for transport use as such. Such large savings in private transport costs would tend to be capitalised in the value of land in inner and fringe areas.

- *Sinclair Knight (1993)*

Another study of infrastructure cost savings has been prepared recently by Sinclair Knight for Brisbane (1993). This study examined the present value of total (including public sector) capital outlays in providing economic and social infrastructure to six study areas within Brisbane – three of these areas were potential urban consolidation sites – under three scenarios of development density. The results are presented in table 5 for the base case scenario, which assumes current standard and density of development for the site and similar sites (refer to table 9 for actual density assumptions and estimates of costs under different density scenarios).

The estimates in table 5 show that the present value of total capital outlays of providing infrastructure services is lower within the existing urban areas than for new development areas. Sinclair Knight noted the cost variation among the study sites and considered that the factors affecting cost differences included:

- local and arterial road capacity;
- spare local, trunk and headworks sewerage capacity;
- spare capacity in human services;
- the need and timing of asset renewal works;
- threshold capacity of trunk and headworks; and
- accessibility to all infrastructure services particularly social services and public transport.

In the estimates reported in table 5, density is not comparable in all areas. The base case assumptions about net residential density range from 10 dwellings per hectare in all of the fringe study areas to 28 dwellings per hectare in Highgate Hill. Nevertheless, the existence of cost (outlay) savings from inner area development remains apparent when densities are assumed to be similar (see table 9).

Table 5: Sinclair Knight: present value of total capital costs of infrastructure for Brisbane, 1992 (\$ per household)^a

<i>Area</i>	<i>Economic infrastructure</i>	<i>Social infrastructure</i>	<i>Total</i>
Existing areas:			
Highgate Hill ^b	3 400	4 200	7 600
Fairfield ^b	4 600	1 400	6 000
Cannon Hill ^c	12 500	700	13 200
Fringe areas:			
Taigum ^d	26 100	6 600	32 700
Rochedale ^e	22 300	6 200	28 500
Ormeau ^f	26 000	12 000	38 000

a Based on twenty year development period at 6 percent real rate of return in 1992 dollar values. Figures reflect base case net residential density in each site and similar sites.

b Redevelopment of inner city area (Highgate Hill) and middle city area (Fairfield).

c Infill development.

d Small development site on close-in fringe area within Brisbane City.

e Large new development site on fringe area of Brisbane City.

f Large new development site in Albert Shire.

Source: Sinclair Knight 1993, table 4.8

- *Limitations of the studies*

Cost savings analysis can have a role in assessing urban development proposals and, in particular, be a guide to the relative merits of urban consolidation in existing areas compared with fringe development. Vintila said:

Within the more difficult setting of a finite world, attempts to measure, compare and minimise costs assume a new importance: they are the best way we have of monitoring – and, if necessary, limiting – our encroachment on finite resources and capacities. They are the only way we have of placing ourselves in a position in which we can begin to intelligently respect future demand. Once again, therefore, objective cost accounting does not betray lack of sophistication. On the contrary, by opening analysis to future demand and by seeking to shed light on the complex rival claims and respective entitlements of present and future, it promises both greater sophistication and moral sensitivity (Sub. 158, p. 7).

Nevertheless, it is important to recognise some of the policy and technical limitations in using this type of analysis for assessing urban consolidation proposals.

Cost savings analyses take a narrow view of the merits of inner urban consolidation vis-a-vis fringe development by ignoring the demand for the developed lots (and dwellings). As the Watson Community Association said, they neglect:

... the view and preferences of consumers and the community (Sub. 146, p. 1).

Ignoring demand in this way can distort decision making by public authorities. The NCPA said:

... some planning policy may be misguided insofar as it seeks to optimise the pattern of urban settlement in terms of the costs saved by the public sector instead of net community benefit. But for as long as subsidised urban infrastructure remains a significant cost to the government, it will be expected of government that it will configure urban growth and densities to avoid *undue* demands on public budgets (Sub. 131, p. 9, emphasis in the original).

Possible policy distortions from the inappropriate use of cost saving analyses can be illustrated by considering how the results of a typical study could be interpreted. Suppose the study showed that, by taking advantage of unused infrastructure capacity in inner areas and developing small lots, large numbers of people could be housed at significantly lower public sector outlays than on large blocks at the fringe. Such a result clearly could be consistent with the view that there is discrimination against inner city development and that such development should be encouraged. The results cannot be used to rule out, however, the possibility that fringe development would be the more attractive option to some purchasers, even if they were asked to pay the full cost difference. Cost savings studies on their own, therefore, do not provide a sufficient basis for evaluating the net social benefit (or cost) of alternative development options.

Moreover, while cost savings analyses can assist in understanding the budgetary impact of development proposals, they do not address the question of the extent to which different locations are subsidised. Some participants viewed an estimated savings in outlays from urban consolidation as evidence of subsidisation to fringe development. For example, Vintila argued:

Where [publicly commissioned studies] identify potential savings to the public purse they point, by implication, to subsidies which continuing lower density development currently enjoy (Sub. 158, p. 8).

However, relative subsidies to location are determined by charging policies as well as locational costs.

Apart from the policy limitations associated with cost savings analyses, there are also technical limitations. First, any significant differences between the 'output' characteristics of inner urban consolidation and fringe development are likely to bias the results. By their nature, cost savings analyses comparing urban

consolidation with fringe developments often do not control for location or for density; developments are not being compared on a similar basis. However, it is important that characteristics such as density and dwelling types, at least, are comparable under each development proposal.

Second, the results depend on the correct allocation of costs to developments by infrastructure providers and the correct identification and valuation of available infrastructure capacity. Both involve complexities and are dealt with in chapter B3 and in the next section. In some cases, spare capacity may have been planned for; future developments (and users) may have been contemplated when the infrastructure was initially provided. Hence, the cost of that initial provision ought to be properly attributed to later developments.

Third, all relevant costs should be identified, but often are not. Costs should include capital as well as recurrent elements. They should also include third party effects.

Even where third party costs are included (the 1992 study by Newman, Kenworthy and Vintila of transport savings included third party costs) there remains room for debate about the money values that may be attributed to particular developments (see appendix F). Generally speaking, the costs of abatement may be a useful measure of third party costs in some circumstances (for example, the costs of meeting a given environmental standard relating to the control of pollution or congestion, or a level of traffic accidents and fatalities). It is important that the methodological basis for the estimation of third party costs be made explicit in the studies.

Cost-benefit analysis

Social cost-benefit analysis of urban development options focuses not only on the cost differences in servicing different areas of the city, but also on the value of the developed blocks. It should also take into account third party costs and benefits.

There have been several social cost-benefit studies done in relation to urban development proposals. A study for Perth by Voran (1992) provides a useful example of the application of conventional cost-benefit principles.

Voran assumed that the benefits to a purchaser of a particular dwelling in a particular location are matched by the price paid for that dwelling in the market:

... based on the assumption of a competitive market, including consumer knowledge of the relevant characteristics which attach to a house, the house price or market value can stand as the whole measure. There is no need to measure separately the value of accessibility or environmental attributes. Hence there is no need to value separately the time savings that may be associated with being closer to the CBD or the benefits of having a greater ratio of park land per house in a development. Both are capitalized into the house price as those households who value them most bid for them by bidding for houses which provide them (Voran 1992, p. 196).

Given this, Voran assumed that the net benefit (or cost) to society of a particular housing option can be measured by the market price of the dwelling less the costs of the land, building, all social and economic infrastructure services and any other costs (Voran 1992, p. 3).

Several general comments can be made about this approach.

As with cost savings analyses, it is important that all the costs – not only outlays on infrastructure – are properly identified and attributed to particular developments, especially in existing areas.

While market prices for dwellings in a development may reflect many external costs and benefits, not all of them may be captured and they will need to be explicitly included. For example, congestion and pollution costs experienced in adjacent areas may not be included in house prices, nor are the ‘neighbourhood’ impacts on the prices of houses in those areas caused by the presence of higher density housing. The New South Wales Environment Protection Authority, for example, said:

... not all environmental externalities are being properly capitalised into land values (frequently through imperfect knowledge and high transaction costs). Hence, the true scarcity of natural resources in geographically constrained areas like Sydney, [is] not yet being fully reflected in market prices ... (Sub 150, p. 2).

To exclude from the analysis the stream of tax payments that residents are liable to make for infrastructure provision (for example, local council rates) could in some circumstances overstate net social costs (or understate net social benefits) associated with development in all areas.

Table 6 presents Voran’s results. It shows that none of the options yield net social benefits; a ‘producer deficit’ would result in each case. However, urban consolidation in Redcliffe would generate a lower deficit compared with fringe developments in Maddington and Armadale.

**Table 6: Voran: economic valuation of three options for Perth, 1991
(\$ per new dwelling)**

	<i>Redcliffe (inner consolidation)</i>	<i>Maddington (middle fringe)</i>	<i>Armadale (outer fringe)</i>
Average house price ^a	85 161	77 087	72 912
Land cost ^a	27 727	10 600	7 100
Building cost ^b	47 000	47 000	47 000
Infrastructure cost ^c			
Public sector ^d			
Water Authority	2 926	6 725	6 819
Telecom	1 700	2 000	2 000
State Energy Commission	2 429	5 600	5 600
Transperth-Public Transport ^e	1 552	3 298	5 239
Health Department ^f	13 195	13 195	13 195
Education Ministry ^g	18 338	21 220	16 881
Local Government Grants Commission ^h	2 047	1 320	1 092
Total	42 187	53 358	50 826
Private sector			
Developers ⁱ	9 567	17 967	21 094
Retail shopping facilities	0	1 490	1 490
Total	9 567	19 457	22 584
Total	51 754	72 815	73 410
Producer deficit^j	(41 320)	(53 328)	(54 598)

a Derived from house and land price data principally from the Office of the Valuer General and the Real Estate Institute of Western Australia.

b Voran considered that the cost of building a basic dwelling in the Perth metropolitan area did not vary with location or development density up to 25 dwellings per hectare for uniform site conditions. The cost figure given here is based on a representative mix of dwelling types. It includes payment of developer contributions to the WAWA for headworks.

c The estimates are not actual costs but 'most likely costs' of providing infrastructure and services.

d Public sector costs excludes developer contributions.

e Estimates represent public transport subsidy per dwelling which is assumed to be proportional to distance of development from CBD. The estimate reflects increment in capital costs and operating costs (net of a capital component and fares and brought to a present value).

f Estimates are related to the increment in costs of providing additional beds in existing hospitals servicing each area and in operating costs (brought to a present value). Voran noted that health costs are population dependent and would be the same for all areas, however, they were included to arrive at an estimate of the total costs of providing infrastructure and services to new dwellings assuming a given number of persons per dwelling.

g Estimates reflect the increment in capital costs and in operating costs (brought to a present value).

h Voran assumed that the grant represents the cost to local government authorities of providing infrastructure and services (the capital cost and operating costs brought to a present value) net of revenues received from residents (brought to a present value).

i These include the costs borne by developers of: land preparation; infrastructure; contributions to a town planning scheme; and of professional fees.

j This is the difference between average house prices and the costs of land, building and infrastructure.

Source: Voran 1992, pp. 6-8.

Several aspects of table 6 are of interest:

- The results do not include all the external costs and benefits associated with development in each area. For example, to the extent that congestion costs are not explicitly included, producer deficits may be underestimated.
- The validity of the infrastructure cost estimates used in the table depends in part on the public sector infrastructure providers having appropriately attributed them to developments.
- The costs per dwelling of social infrastructure such as education and health depend in part on assumptions made about the household size of each dwelling.
- The results do not explicitly include all the tax payments that residents make over time for infrastructure such as State schools. Voran's analysis appears to assume that these tax payments are capitalised in house prices (Voran 1992, p.197).

A problem with cost-benefit analysis of development proposals of most types is the correct valuation of the land on which development is proposed to take place. An accurate cost-benefit analysis should value resources at their next best use, but land values will tend to reflect possible future uses – including the very development being considered. Ideally, this value attributable to future development potential should be eliminated. This is not easily done, and problems associated with land valuation may be responsible, in the case of the Voran analysis, for the curious result that average house prices in Armadale are less than the combined costs of land, building and developer-financed infrastructure.

Voran's estimates, nevertheless, provide a useful, if partial guide to the relative infrastructure costs of developing in particular areas of Perth.

In spite of measurement issues, a social cost-benefit approach to assessing urban development proposals yields more valuable information than cost-savings analyses. By including the preferences of purchasers for developed lots in particular locations and the associated costs of providing infrastructure and services, social cost-benefit analysis can show where and what kind of development would yield the greatest gains in social welfare and thus in efficiency of land use.

A question of capacity

There are several factors that influence the extent of spare capacity in urban services infrastructure at a given time. One relates to the physical state of the

infrastructure such as its age and condition. If it is close to the end of its design life, infrastructure capacity may need to be renewed regardless of whether additional development occurs.

Related to this is the theoretical standard against which existing capacity is measured. If standards are too low, 'measured' spare capacity may not be genuine. The OLG noted a study by the Association of Inner Eastern Councils, Victoria about the establishment of a regional data base for urban infrastructure relevant to urban consolidation. The Office said:

The study showed that when measuring capacity, the tendency is to establish standards to be measured against. This method lends itself more easily to engineering standards than social infrastructure development. Even for physical services, the notion of capacity is relative and fluid. For social infrastructure, no simple formula exists to establish what social infrastructure is needed. This is because human service provision is subject to changing concepts of social needs which are influenced by many factors including both political and financial factors (Sub. 139, p. 12).

Environmental aspects of existing capacity are also relevant: the addition of more users to systems which do not currently perform to community standards may be costly if retrofitting is required.

Another factor affecting the extent of excess capacity relates to the level of utilisation of infrastructure. It has been noted that:

Over time, patterns of utilisation of infrastructure will change. Some changes are directly related to demographics, such as declining demand for pre-natal and primary school services. Others relate to changes in technology and fashion, for example wider usage of dishwashers or changed preference for high/low maintenance gardens, which changes individual demands on water supply and sewerage (Economic Priorities Advisory Committee of the Australian Capital Territory 1992, p. 16).

Some participants have noted that changes in the demographic structure of residential populations have led to lower levels of infrastructure utilisation than were foreseen at the time the infrastructure was provided. For example, the DHHCS said that what empirical evidence exists suggests there is significant spare infrastructure capacity in Australian cities. It noted that the reduction in average household size from 3.6 persons in 1961 to 2.9 persons in 1986 has contributed to spare infrastructure capacity within inner areas, since infrastructure was designed for larger household sizes and often also provided for expansion (Sub. 85, p. 86).

While changes in demography, population levels, preferences, and technology may all affect infrastructure utilisation, charging policies are also relevant. Under-utilisation of existing infrastructure and, hence, spare capacity may reflect the over-charging of services. Infrastructure may also have been over-provided in response to excessive demand caused by under-charging for services in the past.

Availability of capacity varies

Some participants considered that spare infrastructure capacity was widely available. For example, the Australian Capital Territory Government considered it highly likely that there is surplus across-the-board infrastructure capacity not only in Canberra, but also in many areas of Australia's major cities. It said:

While it may be true that some older, inner areas of the capital cities have ageing infrastructure, it should also be recognised that the greatest part of the growth in these cities has taken place since World War II. In the main, the infrastructure built to support this growth is relatively young and designed with post-war 'peak' populations in mind.

This same period has seen an unprecedented and sustained decline in average household size, one which has not been adequately incorporated into population projections until relatively recently. The net result is that almost all areas which have been settled since World War II – and that means the greater part of all Australian capital cities – have significant excess capacity in infrastructure (Sub. 136, p. 4).

Other participants disputed claims about widely available spare capacity. McLoughlin referred to recent problems with sewers in inner Melbourne:

... the evidence ... suggests that it is another of these myths to suggest that there's all this infrastructure, physical and social, lying around underused and therefore we should all use it more intensively (DR transcript, p. 355).

The OLG said:

Not all developed areas have excess capacity in their infrastructure, and further, areas with capacity in some forms of infrastructure may not have surplus in all forms of infrastructure. This is supported by the findings of a Local Government Development Program funded report by the Western Sydney Regional Organisation of Councils on the impact of urban consolidation on the demand for human services (Sub. 139, pp. 11-12).

Studies show that the extent of spare capacity is likely to vary considerably between infrastructure types as well as between locations. For example:

- Hughes Trueman Ludlow et al in their study of Sydney (1991) indicated that under-utilisation of infrastructure capacity of up to 50 per cent was possible at the two urban consolidation sites considered. But it also found that augmentation of capacity was required for stormwater, gas and electricity services under all density levels in both sites, for telephone only under the higher density scenarios in both sites, and for sewerage at higher density levels in the Bankstown site only (p. 52).
- Studies conducted in Victoria as part of the Housing Cost Study (Travers Morgan 1991b) concluded that there is sufficient capacity to permit at least a 10 per cent increase in dwelling density without major constraints or costs (NHS 1991d, p. 63).

On the basis of this evidence, it is difficult to generalise about the availability of spare capacity in cities. As the Brisbane City Council said:

... it's not possible to generalise about the spare capacity of various sorts of infrastructure in established urban areas, including inner city areas. Spare capacity does differ from site to site, and there are significant variations in upgrading and augmentation requirements, and those often depend on the extent to which, or the degree of consolidation that may be desirable on other grounds (DR transcript, p. 147).

This view is supported by a report by the House of Representatives (1992) which said that it:

... was able to determine neither the extent of spare capacity in existing community infrastructure, nor its capacity to meet future social needs at least cost. It appears, as was the case for reported "savings" in physical infrastructure from consolidation (such as sewers), that spare capacity is assumed to be there because the population of inner suburbs has declined (p. 121).

A case-by-case approach to identifying spare capacity is therefore preferred in any analysis undertaken to examine the relative merits of developments of different densities and locations.

Costs rise when approaching capacity constraints

It has been argued that urban consolidation is about making better use of existing capacity. The Australian Capital Territory said that its urban renewal policy is:

... not about massive increases in population density; rather, it is about marginal increases in population which return population levels back *towards* the levels for which *existing* infrastructure was designed – it should not take the use of any infrastructure element beyond the capacity for which it was designed, nor should it require any major infrastructure augmentation (Sub. 136, p. 5, emphasis in the original).

Where some forms of infrastructure are operating close to capacity, urban consolidation proposals can lead to additional costs (including third party costs) associated with augmenting, upgrading, or replacing infrastructure. As the House of Representatives (1992) said:

For the savings considered possible from an urban consolidation program to be achieved, it is essential that redevelopment and urban infill are directed to locations where spare capacity exists. If they are not, the cost to the community could be greater than if urban fringe expansion continued because the cost of augmenting services in the inner suburbs is higher than building them fresh on the fringe (p. 121).

An indication of the cost of replacing infrastructure can be gained from the South Australian Public Accounts Committee (1987) which concluded that real expenditure on replacement of ageing infrastructure in that State would need to increase from \$781 million in the five years to 1985 to \$3034 million in the five years to 2010 (cited in NHS 1991d, p. 63).

It has been argued that stormwater systems are more likely than any other component of hydraulic systems currently to be at or near full capacity and, hence, are likely to require augmentation, upgrading or replacement. For example, Troy referring to north Sydney, claimed:

... higher density development leads to massive costs resulting from the retrofitting of drainage to existing developed areas (Troy 1992, p. 4).

Stormwater systems in some cities (for example, Sydney) are often environmentally unacceptable now, and their existing capacity is often limited by damage in the past which has not been rectified, as resources available for maintenance have been insufficient. Moreover, in inner areas, rectification is especially expensive. Changes to design standards can affect measured capacity and, therefore, alter measured spare capacity, without any changes in the facilities themselves.

2.4 Cost variations for different densities of development

The costs of providing economic and social infrastructure to a dwelling could be expected to be influenced in part by the number of dwellings per hectare, whether in inner areas or at the fringe.

The DHHCS said that smaller lot sizes at the fringe can enable significant savings in economic infrastructure costs. These include reduced per lot requirements for road and paving, and lower costs for pipe, wire and drainage provision. It said that, according to a Travers Morgan study, lot shape and size are key determinants of the cost of land development. The Department noted that:

... for lots in lower price markets, cost reductions are best achieved by reducing lot frontage because the quantity of infrastructure is generally proportional to length of road. (Sub. 85, p. 83).

The Department also quoted evidence from Woodhead (1991) that, in Adelaide, the costs of roads, stormwater, water, sewerage and electricity were separately and collectively cheaper for a lot of 300 square metres than for a lot of 560 square metres. It said that studies which have looked at the costs of providing infrastructure have generally concluded that lot size has the greatest impact on costs per lot.

The Australian Capital Territory Government said:

... that medium density development in new areas contributes to a more efficient use of land and infrastructure and reduced urban sprawl. More particularly, medium density *redevelopment* in *existing* areas both reduces the demand for the housing component and other land associated with population growth (e.g. open space, roads, retailing centres) at

the fringe and leads to a more efficient utilisation of *existing* infrastructure (Sub. 136, p. 5, emphasis in the original).

Several participants also referred to the sensitivity of third party costs to changes in density (see box 2 in relation to air pollution and appendix F). Neutze claimed that while low density developments were sometimes seen as environmentally harmful because of the area of land used and larger travel times, there were environmental advantages:

... there is more scope for absorption of storm water on site or in open spaces and there is more opportunity for recycling organic wastes through composting. ... Furthermore, at low densities damaging and unhealthy concentrations of air and water pollution are less likely to occur (Sub. 12, p. 6).

In response, the DHHCS noted that:

... the tendency to develop medium density housing in an integrated fashion provides opportunities to use common space for retention basins to manage storm-water run off, an option not generally available in large lot individual development, unless even further space is provided for this purpose. Similarly, the relationship between density and transport use would more than rebut the claims that low density [is] less likely to have “unhealthy” concentrations of air pollution, a factor more frequently associated with industry location and topographic and climatic conditions (Sub. 155, p. 13).

Vintila said that certain third party costs are worse for low density cities which rely more heavily on cars and which discourage alternative transport modes. He said that, among other things, greenhouse gas problems are exacerbated; a variety of ‘local destructive’ traffic impacts – including visual and noise pollution, severance and safety – ‘bite more deeply’; and that ‘urban vitality and conviviality’ are compromised (Sub. 158, pp. 14-15).

A number of studies have examined the sensitivity of infrastructure costs to changes in net residential density. Hughes Trueman Ludlow et al’s study (1991) of urban consolidation in Sydney shows that economic infrastructure costs are sensitive to increases in net residential density (see tables 4, 7 and 8 in this chapter).

Box 2: Air pollution, location and density

The degree of air pollution can be affected by population density, topography and climate. The Hawkesbury basin, an area projected for Sydney's urban expansion, provides an example of their interaction. The CSIRO reports that the basin can import pollution when certain weather patterns arise:

... streams of polluted air flow a little way out to sea but with the commencement of the sea breeze the pollution can be brought inland again, picking up a second dose of emissions as it makes its way across the city back towards the Hawkesbury Basin. Thus the Hawkesbury Basin is both a source and receptor region for airflows ... influenced by the pollutant emissions from the rest of Sydney (Johnson 1991, p. 49).

Therefore, a shift away from the basin in favour of greater urban consolidation in south or east Sydney may still create pollution emissions for basin residents.

More generally, however, many argue that urban consolidation achieves better environmental outcomes – including for air quality – than low density development. Newman and Kenworthy (1989) said that fringe expansion contributes to over-provision for and over-dependence on cars and that this exacerbates air pollution problems. Urwin and Searle (1991) said that low density development increases air pollution by reducing the viability of public transport. The DHHCS said:

The sprawling form of Australian cities both derives from and has created a profound dependence on private motor vehicles for commercial, commuter and domestic uses. ... The use of private motor vehicles also has significant implications for energy consumption and air and noise pollution (Sub.85, p. 29).

Others have pointed to positive environmental aspects of the existing urban structure (see appendix F). Neutze said that claimed reductions in air pollution from urban consolidation were simplistic, as they assumed that employees worked in the city centre and lived in the suburbs – part A of this report presents information which indicates that a high degree of intra-suburban commuting is now occurring. Neutze argued that urban consolidation could result in less intra-urban decentralisation of jobs and services with little effect on the total volume of travel. However, Vintila said that evidence from the United States (Cervero and Landis 1992) showed that employment dispersal had only minor effects on average commuting distances but trebled total vehicle kilometres travelled. This arose because of a switch from travel by public transport to car (Sub. 158, p. 9).

Outcomes for air quality from urban consolidation are difficult to predict given that much would depend on the (unknown) behaviour of future residents. Moreover, a number of other environmental questions emerge such as the effect of greater paved and concreted areas per hectare, such as occur with density increases, on urban run-off and stormwater disposal.

Table 7 shows connection and augmentation costs for different densities of new dwellings in Bankstown in Sydney. Most of the costs are for connection to existing services, but augmentation of sewerage systems would be required because of topography. Augmentation of the telecommunications network would also be required if high density development were to be carried out. Costs per dwelling decrease until net residential density reaches 50 dwellings per hectare; further increases in density lead to increased costs largely because of the augmentation costs associated with installing telecommunications.

Table 8 presents estimates of the sensitivity to lot size of the costs of infrastructure provided in fringe locations by public authorities and by developers, which indicate significant cost savings.

Table 4 presents another perspective of the impacts of increasing density in the inner and outer parts of Sydney. Increases in net residential density in the urban consolidation study sites do not have a significant impact on the cost differences between fringe and urban consolidation sites. For example, increasing density from 18 to 50 dwellings per net hectare increases the cost difference from \$28 851 to \$30 684 per dwelling (assuming an 840m² lot in Rouse Hill). On the other hand, there appears to be a greater impact on the cost difference from increasing density at the fringe site. For example, assuming a density of 18 dwellings per hectare in one of the urban consolidation sites, the cost difference from reducing lot size at the fringe (Rouse Hill) falls from \$28 851 to \$17 038 per dwelling.

Overall, Hughes Trueman Ludlow et al's estimates suggest that there are more significant cost savings per lot from increasing density at Rouse Hill compared with the two urban consolidation sites. This could be because the study focused on necessary outlays at these sites. If there are significant attributable costs of spare capacity, the savings from increasing density at the urban consolidation sites may be quite different from those reported in tables 4 and 7.

Sinclair Knight's (1993) study for Brisbane examined the present value of capital outlays under three different scenarios about net residential density. Their results, presented in table 9, show that increases in the densities of the three fringe development study areas were associated with reductions in the costs per household of providing infrastructure to those areas. In relation to the three urban consolidation study areas, however, there are cost increases from the base case density scenario to the higher density scenarios which generally reflect the costs of augmenting existing capacity. Sinclair Knight noted that it is more 'cost-effective' to develop areas at the fringe at a higher density now than to develop at lower densities and consolidate at a later date.

Once again, the Sinclair Knight estimates are only a guide to cost savings from increasing density at all the sites considered. Because of the focus on outlays, the

reductions in costs from increasing density at existing sites may be understated to the extent that attributable costs of any existing spare capacity are not included.

Table 7: Hughes Trueman Ludlow: total capital costs of economic infrastructure associated with urban consolidation in Sydney, 1989-90 (\$ per dwelling)

<i>Infrastructure</i>	<i>Bankstown</i>			
	<i>Number of dwellings per ha</i>			
	<i>18</i>	<i>25</i>	<i>50</i>	<i>150</i>
Sewer				
connection	830	332	160	90
augmentation	0	235	503	585
Water				
connection	800	400	230	160
augmentation	0	0	0	0
Stormwater ^a	0	0	0	0
Gas	353	180	92	31
Power	200	180	104	312
Telecom				
connection	500	250	125	93
augmentation	0	0	139	416
Total	2 683	1 577	1 353	1 687

a This assumes that there were no public infrastructure drainage connection or augmentation costs associated with potential urban consolidation developments at these sites.

Source: Hughes Trueman Ludlow et al 1991, p. 53.

Table 8: Hughes Trueman Ludlow: sensitivity of total capital costs of economic infrastructure in Rouse Hill to lot size, 1989-90

<i>Average lot size</i>	<i>\$ per lot</i>
840m ²	31 534
660m ²	28 026
450m ²	19 721

Source: Hughes Trueman Ludlow et al 1991, p. 46.

Table 9: Sinclair Knight: sensitivity of present value of total capital costs of infrastructure to net residential density for Brisbane, 1992^a

<i>Area</i>	<i>Base case scenario</i>		<i>Medium density scenario</i>		<i>Medium/high density scenario</i>	
	<i> dwellings per ha</i>	<i> \$ per household</i>	<i> dwellings per ha</i>	<i> \$ per household</i>	<i> dwellings per ha</i>	<i> \$ per household</i>
Existing areas:						
Highgate Hill	28	7 600	35	10 700	40	9 900
Fairfield	16	6 000	20	8 500	25	7 300
Cannon	16	13 200	20	14 900	25	15 200
Fringe areas:						
Taigum	10	32 700	16	22 900	20	21 300
Rochedale	10	28 500	16	21 700	20	19 700
Ormeau	10	38 000	16	29 200	20	26 700

a Based on twenty year development period at 6 percent real rate of return in 1992 dollar values.

Source: Sinclair Knight 1993, table 4.8

2.5 Summing up

The costs of providing infrastructure and services can vary greatly within urban areas. This is supported by evidence from several cities and is particularly true for the provision of economic infrastructure and services. Capital costs or outlays (laying pipes, constructing roads) and, to a lesser degree, recurrent costs (pumping water and maintaining roads) vary with location. So too do environmental and other third party costs.

The outlays involved in adding new users to the network will generally be lower in built-up areas where there is genuine excess infrastructure capacity than in fringe areas. A number of studies confirm this. They also show that the extent of cost savings can be very site-specific. Where bottlenecks in some services exist, the costs of rectifying them in inner areas can be high, and should be offset against savings from increased utilisation of other services. Assessments of costs and savings need to be done on a case-by-case basis.

Infrastructure costs per dwelling generally decline as on-site density of development increases. This occurs almost regardless of location. The available evidence varies as to their significance, however, with the larger estimated savings per dwelling occurring at the fringe. However, the attribution of costs for existing infrastructure in the calculations made for urban consolidation options

may not always be appropriate and is certainly a large influence in any comparison.

The importance of environmental and other third party costs of urban settlement also depends on the particular characteristics of the locations and projects in question. For each of the main environmental components – air and water quality and urban land amenity – there are potential costs as well as benefits. In some cases, the costs are unpredictable because they depend upon the behaviour of those people who decide to live there. For example, the extent of motor vehicle side-effects such as congestion and air pollution arising from settlement in a particular location depends, among other influences, on the location of employment and the availability of, and preferences for, public transport.

More broadly, judgments about the relative merits of different development options need to take into account not only their relative costs, but also their benefits to society. Sometimes the more costly developments are also those which people value most highly. The problem is to ensure that all the costs (private and external) are appropriately allocated. That is the subject of the following chapters.

B3 EFFICIENT CHARGING

Pricing of urban infrastructure to reflect costs of location is desirable but has some inherent difficulties which arise from the nature of the services provided. Although location elements may be incorporated in each charging instrument, a combination will normally be necessary if all pricing objectives are to be met. More use should be made of developer contributions and periodic access charges to transmit locational variations in identifiable and attributable costs.

3.1 Introduction

The variation in cost that exists in providing infrastructure to different locations needs to be taken into account by developers in their decisions about which areas to develop.

But cost is not the only consideration for developers when choosing among development options. Consumer preferences also matter, and the cheapest options are not always the most preferred. Burgan and Tisato note:

If we assume higher infrastructure costs at the fringe then, in economic terms, a decision to locate at the fringe rather than in an in-fill redevelopment area, or in a higher density development in an existing area, should not be seen as undesirable from the perspective of the efficiency criteria provided the user was facing the real cost of service provision to each location. Such a decision would merely reflect a strong preference by the user for a fringe location. It is the neglect of this demand characteristic which often plagues discussions of urban consolidation when they are undertaken purely on the grounds of cost minimisation (Sub. 56, p. 22).

The cost of provision and demand would be balanced most effectively if charges for infrastructure provision worked similarly to the charges applying to the provision of many other goods and services; that is, if supply prices reflected differences in costs.

While desirable, price variation to reflect differences in costs has not always occurred for infrastructure.

- For some infrastructure (for example, social infrastructure and some forms of public transport), it is common for there to be no charges, or for users to be charged below cost. In these cases, the costs of provision are largely (or entirely) financed from general revenue sources such as taxes and local council rates.
- Even where there are charges for infrastructure, locational differences in cost can, in practice, prove difficult to identify and reflect in prices. These

difficulties arise because much of the economic infrastructure in cities is provided through networks for which the marginal costs attributable to particular areas or users are often hard to identify. In addition, it is difficult to assess the environmental and other third party costs associated with infrastructure use and provision.

- Where the costs to particular users can be identified, prices which are set to reflect costs in one dimension may compromise the objective of reflecting costs in another dimension. For example, prices for the use of roads and water may need to be very low if there is excess capacity (uncongested roads, newly built dams) to encourage use. But prices set at this level may not signal the costs of providing those services to people in different locations.

If prices are to be set to reflect the costs of providing infrastructure to a location, it is necessary to determine how costs – particularly the costs of infrastructure networks (or joint costs) – are to be measured and allocated to developments. This issue plays a role in each of three important questions raised about current pricing arrangements for infrastructure:

- is the provision of infrastructure to development at the fringe subsidised?
- are some fringe developments favoured over others?
- are inner city developments discouraged?

None of these questions can be addressed without some notion of the appropriate procedure for measuring and attributing costs.

3.2 Conflicts in pricing objectives

Pricing to reflect location versus pricing to achieve efficient use

To transmit location signals, prices should ideally reflect differences in the total cost of providing infrastructure in different locations. Total costs include the capital cost of providing the necessary infrastructure (for example, the construction costs of roads, pipes, dams and schools) and the recurrent costs of providing the service (for example, annual operation and maintenance costs of pumping water).

However, prices that reflect locational differences in cost (at different places on the fringe, between fringe and inner city developments) may not always be consistent with ensuring efficient use of infrastructure (use of existing and future capacity, peak and off-peak use, use in the summer and in the winter).

This is because pricing to reflect locational cost differences is related to the recovery of *total costs* whereas pricing to ensure efficient use is related to the

recovery of *marginal costs*.⁵ For example, it is sometimes suggested that water from a dam – which is virtually costless once it has been harvested – should be priced to reflect only the cost of pumping it to consumers (and any other recurrent costs) unless total demand exceeds total supply, at which time prices should be raised to ensure that water goes to its highest valued uses. Similarly, road use may be virtually costless and so priced at a very low level until congestion starts to occur.

The conflict between pricing for efficient location (to recover total costs) and pricing for efficient use (to recover marginal costs) is at the heart of difficulties that arise in determining prices for infrastructure services. As Burgan and Tisato said:

Marginal costs of the use of the service will not generally be related, in any significant manner, to location. Cost recovery under a uniform tariff related to the quantity consumed of the service will not therefore reflect infrastructure cost differences (Sub. 56, p. 5).

This conflict does not arise in other production activities where the scale of assets employed can be more readily varied in response to demand.

Pricing to reflect location versus equity objectives

Another source of conflict with the principle of recovering locationally sensitive costs arises when there is a desire to price services according to the characteristics of the consumers rather than the cost of provision. This occurs for some social infrastructure such as schools, hospitals and some community facilities which are considered to have ‘merit’ or ‘public good’ characteristics. It is argued that if priced to reflect efficient costs of provision, not enough of these services would be consumed on a sufficiently wide basis for the good of society generally.

Similarly, the services of some economic infrastructure may also be priced below cost for certain groups of consumers who are thought to be deserving. This occurs, for example, in the provision of some forms of public transport, where concessions on fares are available to students, pensioners and the unemployed. Moreover, prices are occasionally set explicitly to eliminate differences in cost

⁵ Marginal cost is the change in total cost which occurs in response to a unit change in the amount of output. In the short run, marginal costs are changes in total costs which reflect a given technology and capacity and, hence, output. Long run marginal costs reflect changes in technology and capacity. In relation to water, for example, Neutze said:

... the long run cost of using a kilometre of water at a particular location includes the annualised replacement cost at the margin of harvesting, storage and transport of water to the address and of the drainage and sewer capacity needed to take the surplus water from the address and treat it (Sub. 110, p. 1).

that occur by region, in order that deserving consumers in different areas are able to achieve equivalent consumption.

Finally, conflicts with pricing to reflect locational costs may stem from government undertakings or concern to limit price increases, for example, by reference to changes to the CPI.

Pricing inefficiencies arising from monopoly power

The large fixed costs associated with infrastructure can typically mean that there is room for only one supplier in particular areas.

This can bring its own distortions in the way prices are set and investment decisions are made. Commonly, concerns about the lack of competition among producers of goods and services concentrate on the likelihood of over-charging. Because many providers of infrastructure are in the public sector, where the profit motive may not be paramount, the lack of competition may also manifest itself in inefficiencies of other kinds. In particular, public authorities may have little incentive to discover and respond to the cost information available to them to set prices in a way that makes the most appropriate compromises between the various dimensions of efficiency just discussed. Hence, the lack of competition has the potential to allow inefficient pricing practices and investment decisions to go unchallenged in the market place.

For this reason, while actual pricing performance in given situations will vary among providers, public scrutiny of pricing practices and investment decisions is both appropriate and necessary. This has occurred in New South Wales with the establishment of a prices tribunal. The tribunal is currently examining the pricing practices of public authorities supplying water and related services.

3.3 What charging instruments are available?

The instruments for financing and charging for infrastructure fall into four broad categories:

- *usage charges per unit for the services consumed* such as charges per kilolitre for water, charges per trip on a congested road (or per entry into a congested area), charges per journey on public transport, or charges per attendance at baby health centres;
- *periodic access (availability) charges on users* such as fixed annual charges for hydraulic services, or motor vehicle registration and licence fees for road users;
- *developer contributions* which may be considered a form of access charge, and which relate to costs attributable to the development, including the

costs of relevant roads, hydraulic services, community services and open space; and

- *general revenue sources* which may include local rates (in the case of local roads and local community facilities), State taxes (in the case of most roads and some hydraulic services and some social infrastructure such as schools), and even (indirectly, through payments to the States) Commonwealth Government taxes.

In addition, infrastructure providers may borrow, thereby delaying the need for recovery of total costs. Eventually, however, the borrowings must be serviced and repaid through use of one of these four means.

Each instrument, on its own, will have a different impact on consumption and location decisions. The extent to which different charging instruments can be employed to meet these objectives will depend on the nature of the infrastructure involved. (More detail on the charging instruments employed in practice by various public authorities providing infrastructure is given in chapter B4.)

Usage charges

Usage charges apply to units of the service consumed. They have a role in rationing consumption and may vary according to the capacity of the infrastructure available in total, at different times of day (for example, energy supply and public transport) and in different seasons (for example, water).

Where they are linked more to marginal costs than to total costs, usage charges imply deficits for the infrastructure provider. Cost recovery has been particularly difficult for roads and mass transit public transport and – to a lesser extent – hydraulic services.

In principle, usage charges can also be used to transmit location costs. This would require the addition to the charge of a component to recover the fixed costs attributed to users in particular areas. Such a component could include depreciation and a rate of return on the initial capital finance required. The HIA said:

Where user charging is considered appropriate, it should be recognised that this can be achieved by having the relevant public authority borrow the required funds and recover the capital servicing costs (as well as recurrent costs) from prices or charges for use of the infrastructure services, rather than by requiring up-front capital contributions from developers (Sub. 52, p. 31).

Neutze argued that:

It is quite likely that the increasing costs of harvesting and transporting water before and after “use” for a large city could readily offset the decreasing costs of distributing it. If

that is the case, properly calculated volume charges could cover much of the cost of the system (Sub. 110, p. 1).

The situation of low cost recovery through usage charges is gradually changing. Many water authorities now make acceptable rates of return on their capital. Although usage charges are not entirely responsible for this, they are playing a role. Taxes on fuel – which are frequently viewed as proxy charges for road use – are also equivalent to a large proportion of road provision costs. In both these areas, however, there is potential for usage charges to have a deleterious effect on consumption at times when infrastructure capacity could absorb additional use at little cost. This could arise, for example, from any monopoly pricing of services.

To minimise such consumption effects, some cost recovery schemes (such as Ramsey pricing) modify prices according to the extent to which the demand of groups of users responds to prices. Prices are higher the less is the likely consumption response. For example, the Federal Airports Corporation's landing charges, which are proportionate to an aircraft's maximum take-off weight, tend to be responsive to demand in this way.

Periodic access charges

Periodic access charges have been used by public authorities providing infrastructure to raise revenue. They are like a charge for the *right* to use the infrastructure and often form one component of the conventional two-part tariff (with a usage charge being the other component).

Periodic access charges are independent of use of the facility and, hence, have a minimal effect on consumption. Examples include water and sewerage rates and annual motor vehicle registration fees.

As currently applied, they typically do not vary with location. For example, motor vehicle registration fees within each State do not generally vary according to where the owner lives. (However, compulsory third party insurance premiums – which are considered by some roads authorities as part of registration fees – can vary with location.) While such uniform charging assists in recovering total costs in aggregate, charges could in principle be made to reflect any locational cost differences.

Periodic access charges are also often based on property values (this applies, for example, to some hydraulic services). Again, such charging may assist in transmitting and recovering total costs of providing services to the entire city, but need bear no relation to the costs of providing services to developments at the fringe or inner areas.

If periodic access charges were determined on the basis of the capital costs of servicing different areas, they would have considerable potential to aid in transmitting costs of location. They would be especially valuable if used in association with usage charges.

While Brisbane City Council agreed with that view in principle, it considered that households may not be very responsive to locationally differentiated charges and said that:

... for individual households the location and extent of consumption of housing is relatively inelastic, i.e. the costs of changing housing are significant impediments to adjusting location or extent of consumption. For this reason the benefits of pricing reforms might not be realised whilst these impediments to relocation continue. Moreover, household location decisions are based on a range of factors other than economic ones, and in any case, are more closely related to the upfront capital cost of location rather than the long-run recurrent costs (Sub. 117, p. 4).

Many consumers will remain unaffected by changes in pricing structure, but there are some for whom small changes in the costs of location will cause their next housing relocation to be different from what it would otherwise have been. Such alterations would normally be noticed by developers through a change in the overall strength of demand for particular locations and lead to changes in the balance between different areas of settlement.

The South Australian Government agreed with the recommendation but noted that:

... the scale of the areas to which differentiation will apply will always be somewhat arbitrary because of the interconnection between system components, which is a feature of the Adelaide water supply and sewerage system (Sub. 161, p. 8).

It is conceivable that infrastructure could be entirely financed from periodic access charges. The charge would include a component for the return on capital required to meet the initial capital expenditure of providing the infrastructure to particular areas, the depreciation associated with it, and some allowance for the recurrent costs associated with average consumption. Exclusive reliance on periodic access charges, however, would mean missing out on consumption-rationing benefits to be had from usage charges. As with usage charges, therefore, use of a periodic access charge alone is unlikely to meet all objectives to which pricing policy is directed.

Developer contributions

Increasingly, the capital costs to public authorities of providing infrastructure to developments at the fringe and in inner areas are being recovered, wholly or in

part, from developers at the time of development. Such developer contributions take the form of:

- payments for infrastructure provided by public authorities (for example, water and sewerage distribution infrastructure and social infrastructure);
- the provision of infrastructure by developers, with ownership subsequently transferring to a public authority (for example, hydraulic reticulation, street lighting, kerbing and guttering); and
- the ceding of land (for example, provision of open space).

The trend towards developer contributions, particularly for the provision of off-site infrastructure, has been accelerating as governments have sought to limit borrowing, as ‘user pays’ principles have become more widely accepted, and as costs have been increasing (for example, from having to meet higher environmental standards). For example, the SWB said that:

... increased reliance on developer charges [by water authorities] can be viewed as a response by authorities to the increasing constraints placed upon them through limited access to funds; an inability to increase periodic prices; and their inability to undertake only those investments which were profitable to them (Sub. 70, p. 2).

This trend began several decades ago. As Walsh said:

Beginning in the mid 1950s, developers increasingly have been required to provide, or pay for, an increasing range (and standard) of on-site services within subdivisions as well. This also increasingly has been extended to include requirements to help finance community facilities – such as land for open spaces, recreation and public amenities (Sub. 56, p. 14).

Developer contributions are now almost universal for hydraulic services, roads and open space within subdivisions.

Payments from developers (or developer charges) are also common for off-site provision of economic infrastructure that can be attributed to particular developments. Increasingly they are also being levied for social infrastructure (for example, in New South Wales under section 94 of the *Environmental Planning and Assessment Act 1979*). Arrangements in each State and Territory vary a great deal. (Further aspects of developer charges and other contributions for particular types of infrastructure are considered in chapter B4.)

Because developer contributions can be related to the costs of providing specific infrastructure in specific areas, they can – of all the charging mechanisms – most closely reflect locationally sensitive costs.

Generally, however, developer contributions are directed to recovering the initial capital costs of provision – only part of the real costs of location. For example, asset replacement costs are not usually included in the setting of developer

contributions. Hence, if a developer provided an asset which required replacement after ten years, then the real costs of location would not be transmitted in developer contributions. Moreover, asset replacement would need to be financed from other sources (for example, periodic access and usage charges).

In response to the draft report, the Hunter Water Corporation described its approach to determining developer charges. The Corporation's approach moves away from one of recovering the initial capital costs. It applies a financial model to each development which is:

... in effect, a feasibility study of investing in a new activity (in Hunter Water's case, a new development) similar to that which would be undertaken by the private sector in assessing investments (Sub. 140, p. 2).

The model compares capital and operating costs which will be incurred by the Hunter Water Corporation to service new development with benefits from developer provided infrastructure, upfront cash contributions, annual service charges and income from water usage charges. The analysis is undertaken for 20 years and is based on a commercial rate of return reflecting the risks of the venture. The developer charge is then, in effect, set equal to the residual cost – it is a charge of that amount that would equate total charges to total costs. The Corporation said:

... overall, through use of a modelling approach, developer charges will be more soundly based and better price signals will be provided to developers than in the past (Sub. 140, p. 3).

This is one of several practical approaches to the determination of developer contributions. It has many similarities to the approach used by the Commission in chapter B4 (and appendix D) to calculate the differences between costs and charges for hydraulic infrastructure.

The Hunter Water Corporation suggested that its feasibility study approach could be readily applied by other water authorities and noted that the Australian Water Resource Council has endorsed it in principle (Sub. 140, pp. 1-2). The Commission considers that a feasibility or cost-benefit approach to determining developer contributions for developments has merit in most cases as long as it is transparent. Such an approach encompasses upfront costs and charges and recurrent cash flows. It limits developer contributions to the amount necessary to equate total charges for relevant (attributable) service provision to total costs in particular areas.

As is the case with other forms of charging, developer contributions could, in principle, finance the entire cost of infrastructure, but they too are probably best used in conjunction with other charging instruments such as usage charges.

Financing from general revenue

If assets are financed from general revenue sources, there is little possibility of transmitting the locational costs of provision to those directly affected. Such sources of finance have been commonly used in the past to make up the deficits incurred by public authorities providing infrastructure, frequently as a consequence of pricing to achieve efficiency in consumption of economic infrastructure. Deficits are also quite common in the provision of social infrastructure and are argued to be justified on the basis that the use of such services is regarded by society to be especially worthwhile.

Financing local government infrastructure from general revenue can be loosely connected with particular regions. Local communities as a whole have in the past borne the cost of financing local government infrastructure such as community centres and local roads. Compared with the use of developer contributions, financing from local government general revenue raised from the levying of rates does not closely connect locational costs with particular developments. However, it may impinge on the location decisions of future or prospective residents to a greater extent than if the funds were to originate from State general revenue.

Neutze defended the role of property taxes in financing infrastructure. He said:

... they capture a portion of the increase in value which results from the provision of infrastructure;

... they are a relatively non-distortionary way of covering any overheads which are not covered by volume charges equal to [long run marginal cost] of the volume of services and appropriate locationally differentiated charges; and

... they are any appropriate way of charging for the environmental and other public good benefits derived from infrastructure, including the option demand for public transport, environmental improvement etc (Sub. 110, p. 2).

Property taxes are discussed in part C.

3.4 Which charging instruments should be employed?

To provide and maintain infrastructure services, some or all of the following capital and recurrent costs are incurred:

- *initial provision* of the assets (for example, roads, pipes, dams, schools, community centres, open space);
- *maintenance* of the assets, *administration* of the supervising authority, *staffing* of schools and community centres and *other recurrent* costs; and
- *replacement* of assets at the end of their service life.

If decisions to invest in infrastructure projects and to locate in particular regions are to reflect appropriately the differential costs of location, it will be necessary for all these cost components to be taken into account in charging.

The Commission considers that using a mix of charging instruments (for example, periodic access and usage charges) will give public authorities most flexibility in meeting simultaneous objectives – such as to ration capacity or control congestion, or to reflect community aims to provide services to particular groups in society, or to encourage consumption of services having merit characteristics – as well as taking into account the costs of ‘transacting’ (for example, the costs of determining, administering and complying with schedules of charges). The weight put on the different objectives will help determine the appropriate mix of charging instruments.

One possible approach – advocated by the Commission in its report on *Water Resources and Waste Water Disposal* – is to recover the costs of servicing capital by using developer and periodic access charges, and to recover marginal (including congestion) costs by using usage charges. This would allow developer and periodic access charges to account for regional differences in costs and for usage charges to be related to the marginal cost of supply. This approach is consistent with the logic behind the two-part tariff (IC 1992).

Periodic access charges and developer contributions

If developer contributions were to be levied when the initial capital expenditures on infrastructure provision were incurred, there would need to be further rounds of these charges each time the infrastructure was replaced. In practice, however, payments are often spread over time, especially where infrastructure is long-lived. (Appendix D provides some information on asset lives for hydraulic infrastructure.) Consumers are then faced with a regular stream of (access) payments which cover asset replacement over the long haul.

There is no strict line to be drawn between recovery of capital costs at the time the infrastructure is provided (or the time of connection) and recovery over time.

At one extreme, developer contributions could, in principle, be set at a level that recovered total costs (including asset replacement costs). At the other extreme, a uniform periodic access charge could be set to recover the total costs of provision and replacement in equal annual payments.

In practice, the upfront payment of total costs through developer contributions that exceed the initial capital expenditure is likely to be difficult to implement. Purchasers of serviced land may have legitimate concerns that their credit with the infrastructure provider may not survive pricing policy changes in the future.

If periodic access charges were to include the cost of replacing infrastructure, it would be desirable that they vary according to the cost of providing replacement assets in different regions. This would mean that periodic access charges for hydraulic services, in particular, would need to be structured to reflect the costs associated with the replacement of infrastructure in a given area. Another possibility is that periodic access charges for roads (in the form of motor vehicle registration fees) might vary by area. However, there are transactions costs in relying upon this approach to setting charges to recover the costs of location.

Variation in periodic access charges could also be tailored to reflect the possibility that infrastructure can be built to different standards in different areas. Otherwise, if periodic access charges were uniform and developer contributions covered initial capital expenditure, those consumers supplied with better-built, longer-lasting facilities might pay excessive amounts in the form of high initial developer contributions and high periodic access charges.

There are other useful aspects of differentiated periodic access charges. They allow for the fact that there will be a mix of financing used for assets in a region – developer contributed assets used by some residents and authority contributed assets used by others. Further, they can be relevant to concerns about affordability. This latter issue is discussed in chapter B5.

If the authority is to charge the cost of the finance capital that is tied up in the assets it provides, it would be desirable for users of those assets to bear a higher charge than users of developer contributed assets. The suggestion made in the Commission's report on *Water Resources and Waste Water Disposal* was for the rate of return on capital component to be excluded from the periodic access charge for the capital contributed through the developer contribution (IC 1992).

Usage charges

When recurrent costs vary by region, they can be reflected in usage charges. For example, costs of sewage treatment which vary with the receiving environment or the costs of water pumping which vary with the terrain could be reflected in charges related to use of the system. The Hunter Water Corporation levies both a

periodic access charge related to the size of the sewerage connection and a usage charge based on the percentage of supplied water presumed to be returned to the sewerage system.

In practice, however, usage charges are usually uniform across locations. For water supply and public transport, they usually relate to the operating costs associated with the system as a whole.

Charges for use may be also employed to ration capacity. For example, charges for road use could lead to traffic reduction or diversion, and so reduce traffic congestion; charges for water use could reduce demand to an extent sufficient to enable the supply authority to defer large capital works including the construction of a major supply dam.

The 'art' of pricing

Choosing prices to meet objectives that range from efficient consumption to efficient location is not straightforward. Paterson noted:

Unfortunately, reality always complicates the application of the marginal rules and we are then transported from the world of science to the world of art. This is because any real world system of production and distribution has literally scores of variables in its production function and hundreds of marginals. If spatial distribution comes into it that becomes thousands. We must choose, at most, a handful of these to price on. In that choice we express a quite subjective vision of what is to be considered both important and suitable for the exercise of consumer choice. There-in lies the art (Paterson 1991, p.1).

Transactions costs must also be factored into an assessment of appropriate levels of pricing differentiation. A number of participants in their responses to the draft report considered that they may be quite large. For example, Brisbane City Council said:

Capital and capital maintenance charges would lend themselves to recovery through [greater locational] charging, but not recurrent costs. The efficiencies which could be generated by the imposition of location sensitive charges may be offset by the inefficiencies which may result from the more complex accounting and administrative systems required to put such charges into effect, and may also result in confusion for developers and ratepayers (Sub. 117, p. 3).

It is unlikely that any single charging system will achieve efficiency in all dimensions required. However, location is clearly an important influence on costs of providing infrastructure and services, and charges should, wherever possible, reflect any significant locational differences in the costs of providing infrastructure. Where they cannot do so, they should at least seek to avoid systematic locational bias.

Several participants raised concerns about transparency. For example, Leigh-Murray and Tait said:

Whilst we agree with this in principle, it is crucially important in practice that the basis of charging is transparent (and disclosed), that efficiencies are passed onto beneficiaries and that a system of charging, once in place, is independently auditable (Sub. 127, attachment, p. 2).

The Commission endorses this observation and comments further in chapter B6.

The Commission was criticised by participants for not recommending a single charging system. The UDIA said that it:

... would like more guidance as to what the [Commission's] position on charging is. If it is true that "It is unlikely that any single charging system will achieve efficiency in all dimensions required" what is the [Commission's] preferred charging system which will achieve the best possible result. That should be embodied in a firm recommendation (Sub. 106, p. 3).

A number of participants also expressed their own preferences for particular charging instruments. A selection of their comments is given in box 1.

It is not possible to recommend a single charging system which would apply to all authorities. The appropriate mix of charging instruments depends on the relative costs and benefits to each authority given their particular circumstances. For example, the charging system used by hydraulics authorities may be quite different from that used by roads authorities.

Clearly, the transactions costs in determining and collecting locationally differentiated charges will be a major factor. Collecting differentiated charges just once, in the form of developer contributions, has great appeal. However, the information requirements of a system that calculates developer contributions precisely (for example, a system that estimates them as residuals to equate costs and charges over time including all future asset replacement) can be quite demanding. Recurrent charges for access to and use of infrastructure do not make the same demands and could, in principle, be varied as costs change over time.

Differentiated developer contributions are often seen to be more equitable than differentiated access and usage charges. For example, it is apparently more acceptable to offer lower charges to developers in areas of genuine excess capacity, than to levy purchasers of the developed lots, for example, lower access

and usage charges for water or lower registration fees for motor vehicles than neighbouring residents.

Box 1: Participants' comments on the choice of charging instrument

In responding to the draft report, participants expressed preferences for some types of charging instruments over others. Most favoured the use of recurrent charges.

The Queensland Government said:

Arguably there are a number of superior mechanisms [to developer contributions] by which house lot buyers can be confronted with the true resource cost of their locational decisions. These include various forms of targeted rating schemes or 'benefited area assessments' under which individual or catchment identified users pay for infrastructure services through recurrent access and usage charges (Sub. 153, p. 3).

Peet and Company expressed concern about the use of developer headworks charges as the means of achieving efficient pricing and said:

... the most appropriate pricing model is to have varying levels of rates levied on the land which comes out of development with the rate level determined by the cost of infrastructure.

This will impact on demand for land in areas with high costs and therefore constrain infrastructure spending in these areas but where development does take place in areas of high cost, sufficient rates will be levied to partially service and amortise the debt incurred by the service authorities in providing the infrastructure to that area (Sub. 119, p. 3).

Mant considered that:

... governments should consider selling development rights to recover the cost of infrastructure and other services, rather than levying developer charges and,

... as far as possible, benefit assessments should be made to recover costs of infrastructure and services where direct pricing is not appropriate (Sub. 126, p. 2).

Realty Research noted that:

To be pragmatic, there seems little prospect of the established system of developer contributions changing. The existing system has developed by following 'the line of least resistance' ...

Whichever funding methods are adopted, contributions by developers will continue to be significant in financing land development (Sub. 118, pp. 3-4).

The UDIA said:

... charging for major infrastructure items should be spread over time rather than charged as an up-front cost to developers which will ultimately adversely affect housing access opportunities for Australian families (Sub. 106, p. 3).

Neutze said:

... if developer contributions are the sole charges that [vary] by location, all they need to do is to capture the cost *differences* between locations and not all of those categories of cost which vary with location (and also vary with use etc) (Sub. 110, p. 2, emphasis in the original).

Choice among charging instruments will also depend on the extent of conflict between objectives. For instance, it would be risking considerable interference with efficient usage patterns to attempt to recover location costs through differentiated usage charges. However, if demand for day-to-day use was relatively unresponsive to such charges, and other instruments of recovering costs were for some reason unavailable, differentiated usage charges should not be ruled out.

On balance, there is much to be said for location-specific costs being reflected in the form of differentiated developer contributions (perhaps in the way suggested by the Hunter Water Corporation), as long as the charges are transparent and take account of true locational cost differences through time. Differentiated periodic access charges could achieve many of the same goals, but may be less acceptable to consumers.

In general, because efficiency in pricing has more than one dimension, it will usually be necessary to employ a number of charging instruments simultaneously. Developer charges are well-suited to reflecting variations in costs by location and in some respects may be preferred to periodic access charges for that purpose. Charges for use are probably best matched with marginal costs of supply of the service (including congestion costs, broadly defined).

3.5 Allocating the costs of economic infrastructure

Charges can be adjusted to reflect the costs of providing services to different locations. But how are the relevant costs to be determined?

A key concept is that of *incremental* cost – the cost of meeting additional demands on the system created by the provision of services to additional consumers in particular areas. But incremental costs for networked services are not always easy to determine.

The South Australian Government noted (in the context of property-based charging) that:

... some urban services such as water and sewer services are characterised by high capital intensity and a high degree of integration. This means that costs of service provision are dominated by joint costs such that it would be very difficult, costly and ultimately arbitrary to attribute different locations and/or customer groups (Sub. 161, p. 8).

Particular problems in attribution arise for ‘joint’ costs, such as when infrastructure is provided for a development but also has value for residents in other developments. The HIA said:

...where augmentation of the system-wide supply capacity is required (eg water storage capacity, sewerage treatment capacity, trunk connections, or arterial road capacity), to attempt to attribute the costs exclusively to new residential developments would be to ignore the fact that there are potential benefits to the community as a whole, and would be highly inequitable. Replacement cost pricing for all system users, existing as well as new would be required (Sub. 52, p. 32).

On the other hand, once infrastructure is in (or on) the ground, it is often possible to connect additional users at very little additional cost. But should this additional cost be all that is charged, especially if it is a planned increment which was always intended to be provided as part of the system? Should existing users benefit from the broadened customer base?

To determine the incremental cost of provision of infrastructure it is useful to distinguish among four types of infrastructure:

- infrastructure specific to a given development (for example, reticulation);
- infrastructure which is shared with other new developments (for example, distribution works);
- infrastructure which is shared between some existing development and new development (for example, distribution works and some social infrastructure);
- infrastructure which is common to all developments (for example, headworks).

Development-specific infrastructure

Economic infrastructure which is located within particular developments has costs which are attributable to particular areas. This includes roads within the development, and reticulation of water, sewerage and stormwater drainage. Under current practice, it is common for this infrastructure to be provided either by the developer or by the relevant public authority who may charge the developer.

It is sometimes possible to attribute some off-site economic infrastructure – main roads, main drains, spur railway lines – which may also be wholly or partly specific to particular large-scale developments.

Differences in initial capital costs arising from the nature of the terrain being serviced can readily be reflected in charges for this type of infrastructure.

While developer contributions usually account for the initial capital costs of provision, the subsequent costs of replacement of assets specific to developments are not so clearly attributed. Many assets such as roads and open space are handed over to local councils for subsequent maintenance, and a large proportion of on-site hydraulic infrastructure is the property of the hydraulic authorities.

Charging mechanisms are rarely used to reflect those costs for the subsequent maintenance and replacement of infrastructure as they differ from site to site.

More use of differentiated charges for replacement and maintenance of assets could be made. Some specific suggestions to achieve this, involving the use of differentiated periodic access charges and avoiding charges based on property values, are considered in chapter B4.

Shared costs – among new developments

When elements of infrastructure are shared among developments, significant conceptual problems can arise in attributing costs. Shared infrastructure includes much of the trunk delivery infrastructure which may be specific to a large development but will be common if developments are smaller. It includes feeder roads, common pipes, and – for economic infrastructure – corresponds to the distribution works in figure 1 in chapter B1.

In considering new investment in infrastructure that is shared, the incremental components of investment should only be made as long as the prospective users' valuation of benefits exceeds total cost. Such a cost-benefit assessment should apply whether or not charges are intended to be levied. Otherwise, inappropriate levels of investment may occur and resources may, for example, be wasted in providing infrastructure that is more than socially desired.

If charges are used to elicit an indication of consumers' valuations of the provision of infrastructure, the simplest approach is to divide the cost of additions to the system equally among those who benefit. If costs can be recovered from a group of users of shared infrastructure, provision is not being made to any group which values it at less than its cost.

In the absence of charges, the assessment of the costs and benefits of providing infrastructure will need to be based on indirect indicators of demand. Such indicators might include for social infrastructure, likely demographic changes, and for roads, the perceived benefits that people may obtain from improved travel times.

Shared costs – between existing and new developments

It is commonly observed that costs of redevelopment or infill in inner areas may currently be very much lower than developments at the fringe. The source of this cost advantage is the claimed existence of unused capacity in infrastructure in inner areas which developments could share. It would seem logical, therefore, that charges for infrastructure should be set at levels dictated by incremental costs in order to reflect this cost advantage.

Some, however, have argued that costs should not drive prices in this way. Neutze argued:

While it may be inexpensive to add users in some area where there is spare capacity, there seems no good reason why an authority should vary its charges accordingly. While developers should never be charged at less than incremental cost of providing them, there are often reasons for charges that are above incremental cost. The value of infrastructure services is probably as great, if not greater in established areas than on the fringe. If authorities were to charge only to cover incremental costs in established areas, they would be grossly undercharging for their services (Sub. 12, p. 4).

Consideration of this problem will be influenced by how the excess capacity has come about in the first place.

If excess capacity stems from inappropriate pricing policies applied to existing users (for example, property-based charging for water services), then pricing to existing users should be amended to be more reflective of the marginal costs of provision. This might entail lower prices to encourage greater use of services.

However, excess capacity in infrastructure may still persist even where charges have been adjusted in this way. This is because excess capacity may reflect earlier investment decisions based on unmet assumptions about population growth and future demographic patterns: more users than those that currently exist may have been anticipated.

Consideration of this situation is assisted by thinking about how a commercial provider would handle it. For such a provider, it would not be profitable for excess capacity to remain unused. Such a provider would be keen to come to an arrangement that guaranteed a payment that exceeded any marginal costs associated with the use of capacity, but at the same time, not wish to allow use of the capacity at a price below what the new users were willing to pay. After all, connection at a negligible charge may be damaging to cost recovery over the long run, if users who might be connected later are thereby ‘crowded out’.

The commercial solution to the charging problem will probably depend on bargaining skills on both sides. Importantly though, where use of the infrastructure is genuinely advantageous to the prospective user, there are incentives on both sides for agreement to be struck.

Like the commercial provider, the public provider should be concerned to ensure that infrastructure is priced so that excess capacity is used. To leave capacity idle is to deny a net social benefit, unless there is no demand at all at a charge equal to the marginal cost of connection. And sometimes it will be clear that idle capacity would be the result of higher pricing regimes.

The Commission was told of a number of examples of excess capacity in specific services in inner city areas, resulting principally from social trends towards smaller households. In a case where infrastructure has been provided for a certain predicted population which had not eventuated – and which had little prospect of eventuating – public authorities providing infrastructure would have every justification for attempting to encourage use of capacity.

To the extent that some of this price reduction was reflected in reduced or waived developer contributions, it should be relatively easily implemented. But, as noted previously, to the extent that reductions were offered in periodic access charges or usage charges, equity issues could arise between new and existing users if they were required to pay different amounts. It is unlikely that such differentiated charging would be implemented for political or administratively practical reasons. Sometimes too, lowering prices to residents of developments in existing areas to marginal cost levels will also help in achieving efficient use of existing capacity.

In responding to the draft report, several participants commented on the use of charges to reduce excess capacity. The New South Wales Environment Protection Authority said that it was important the apparent excess capacity is genuine. It said:

... use of local capacity resulting in lower developer contributions may be acceptable, but user charges should reflect the costs of other parts of the system. In particular, pricing of capacity should convey the correct signals concerning the impact of current consumption on future costs (eg. in the case of having to build a new dam once existing capacity is exhausted) (Sub. 150, p. 2).

The Australian Capital Territory Government noted implementation difficulties.

Although in theory [differential] charges could be incorporated into access charges, in practice such a scheme would be difficult to implement. In particular, few would be willing to accept higher (differential) charges for water and sewerage because of inadequate infrastructure resulting from inaccurate population forecasts (Sub. 136, p. 9)

Jennings Housing had some reservations about charging to ensure that capacity is appropriately used without either cross-subsidy or penalty charging (Sub. 124, p. 3).

Neutze considered:

The emphasis I would place on the [long run marginal cost] of increasing the supply of water to any part of a large urban area is partly why I believe that the concessions that should be given to users in areas where there is spare capacity are smaller than is often assumed. I don't believe that the total system costs of encouraging additional use where there is localised spare capacity in a network are generally small (Sub. 110, p. 2).

The decision about when excess capacity exists will always be one of commercial judgment. If excess capacity is only temporary, it would not be sensible to prevent the connection of a consumer later through having capacity taken by a cheap offer of connection now.

The SWB has a policy of charging for shared infrastructure in developer contributions up to 25 years after it has been provided. This 25-year rule constitutes a test, of sorts, of the extent of genuine excess capacity. It allows sufficient time to determine whether planned use of capacity is achieved. It is also a transparent rule that avoids arbitrary procedures for price reduction.

The Commission considers that where excess capacity reflects deficient use resulting from inappropriate pricing policies (for example, such as those based on property values), those policies should be reformed. Where excess capacity stems from investment decisions based on long run projections of population and demographic changes, which will not be realised, it is important that use of it not be discouraged by prices that exceed the costs of supply. New (and existing) users should be charged at levels that ensure that capacity is appropriately used.

Costs that are common to all development

There are some forms of infrastructure which must be provided wherever development occurs. These include dams, inner city rail networks, power stations, and national highways. They correspond to the headworks components in figure 1 in chapter B1.

Charging for the provision of headworks could not sensibly be based on anything other than an equal per customer basis. But if these charges are uniform across users of infrastructure the question arises as to whether they are needed to transmit location incentives.

Hydraulic services

In the case of hydraulic services, the effect on decisions of charging for common costs would probably be minimal – significant differences in charging would occur only between those connected to the network and those who were not. The latter group is a fast diminishing section of the population. The effects on others

of unsewered and undrained urban blocks are generally considered to be undesirable, and it is this concern, increasingly, which will determine whether individuals will be able to remain independent of centrally provided hydraulic services.

Nevertheless there are likely to be wider benefits from charging for headworks. In particular, the discipline on providers to recover costs for all elements of infrastructure should help reduce any excessive or premature provision. Once again, consumer resistance to higher charges may be a useful discipline. In addition, the DHHCS noted:

... the existence of increasing marginal costs for expanding some “common” services. For example, the cost of catchment and storage may be higher as less advantageous solutions are needed to increase capacity. To the extent that land use patterns impact on demand (e.g., large blocks and large lawns increase consumption), this “common cost” needs to be reflected (Sub. 155, p. 13).

It was for these reasons that the Commission recommended full cost recovery for hydraulic services in its report on *Water Resources and Waste Water Disposal*. In some circumstances this may imply the need for a specific charging component to recover common (headworks) costs (IC 1992).

The recovery of common costs for hydraulic services is not inconsistent with efficiency in location. Because these costs are incurred wherever people locate within an urban area, charging to recover them everywhere would have limited effects on locational decisions.

Public transport

The same reasoning applies to system-wide common costs associated with railway or other fixed track public transport. These costs are not those which are shared among particular areas (for example, spur lines), but the costs associated with the central network of railway lines. They are necessary to have a system at all, and charges cannot therefore be used to assist household and business location decisions. However, they can affect the investment decisions of public authorities providing infrastructure.

Roads

National highways correspond to the headworks in hydraulic services. They are used, on the whole, for irregular journeys, wherever people locate. If costs were to be charged out, it is difficult to see how charges could be other than equal for each new block. In that case the charges would appear to be doing very little work in providing signals for provision. Here it would seem more appropriate for charges to be differentiated by some other indication of road use, such as motor vehicle ownership.

Other considerations

A number of participants were concerned that allowing recovery of headworks would result in over-recovery of costs. The UDIA said:

... where common costs are major items like new headworks, then up-front charging should be avoided. It is important also that authorities do not recover the capital cost up-front and then include in the usage charges a component for the capital costs (Sub. 106, p. 4).

Leagh-Murray and Tait said:

... care should be exercised in attempting to define what costs should be passed on. All levels of Government attempt to abdicate responsibility for funding of infrastructure (soft and hard). Foisting this onto the developer (end user) will increase the cost of housing (Sub. 127, attachment, p. 2).

The OLG favoured the use of a taxing mechanism and said:

As with social infrastructure, district level facilities are difficult to levy for because of the difficulty in attributing costs or demand to specific developments or users and in both cases a broadly based tax may be more appropriate as a means of collecting funds for these forms of infrastructure (Sub. 139, p. 9).

The South Australian Government was concerned that:

... the charging of headworks to new development at the fringe is somewhat hazardous because of the extent of subdivided but poorly serviced land supply in more remote country centres which are within commuting range of Adelaide. Any proposed policy of full-cost charging at the urban fringe would need to take into account the possible redistribution of urban demand to these country centres. Because of the scale of land supply in such townships, the redistribution effect could be expected to last up to a decade. It would result in problems for the provision of social infrastructure in such localities and impacts on the country road system by commuters (Sub. 161, p. 7)

While it is not necessary to charge explicitly for common costs to transmit efficient location incentives within cities, cost recovery by public authorities is desirable for reasons of efficient resource management and decision making in relation to the provision of new infrastructure.

3.6 Allocating the costs of social infrastructure

The charging issues associated with most social infrastructure are somewhat different from those associated with economic infrastructure. Total cost recovery has tended to be a minor consideration in its provision. Many services have been subsidised to such an extent that users have provided a negligible contribution, if any, to total costs – whether in inner areas or at the fringe.

In response to the draft report, many participants have commented on the inappropriateness of charging for social infrastructure. For example, the OLG said:

If a nexus can be established between the private benefit and the good provided, user pays is an efficient way of levying for the development. It is when there is a large benefit provided to the community that user pays as a means of levying has its limitations. Lang (1991) ... states that social infrastructure, which has wider community benefits and generally is provided to meet redistributive goals of government, should not, in principle, be funded from a user pays tax. Developer contributions may not be an ideal way to levy for infrastructure particularly social infrastructure (Sub. 139, p. 8).

The Commission considers that it would be inappropriate in this inquiry to recommend on such matters as whether education and health care should be subsidised or provided on an entirely user pays basis.

Nevertheless, if charges were levied, determining the attributable costs of providing social infrastructure would involve many of the same complexities as those associated with economic infrastructure.

- Costs may differ in different sites because of terrain, land values, and construction techniques and design (for example, the costs of a new school in inner city and fringe areas may differ because land values).
- Costs may be shared between particular developments, or be common to all development. Hence, it may be possible to share existing infrastructure among additional users at little extra cost (for example, hospitals and parks).

A proportion of the costs associated with some social infrastructure can sometimes be attributed to particular sites. Fire stations, local play grounds, and even schools can be examples of such development-specific social infrastructure. However, the distinction between development-specific infrastructure and shared infrastructure cannot always be drawn as clearly as in the case of economic infrastructure. Existing facilities on a particular site can sometimes cater to wider populations.

If social infrastructure were to be provided only when total willingness to pay for it exceeded total costs, then charges (if they were levied) would need to take account of any cost differences and any differences in benefits received.

There are, therefore, some empirical questions that are central to the issue of social infrastructure costs and which are considered in chapter B4.

- Do the total costs of providing social infrastructure differ significantly across locations?
- Do charging or other tests of valuation (for example, cost-benefit analysis) ensure that appropriate location decisions are made?

3.7 Incorporating third party costs in charges

While the focus in this chapter so far has been on capturing the financial costs of infrastructure provision in charges, consideration also needs to be given to the potential for infrastructure charges to incorporate third party costs (see appendix F for further discussion).

Third party costs can emerge from or be enlarged by inefficient charging. Where charges are too low to recover even the financial costs, the use of infrastructure can be excessive, and any adverse environmental impacts more severe than they would otherwise have been. Failure to take account of any locational factors in charges may enhance environmental degradation. For example, under-charging for water use in a location that is relatively expensive to service, can encourage excessive investment in and consumption and degradation of water resources in that area.

Achieving infrastructure charges that are more in line with financial costs would, therefore, go some way towards ameliorating third party costs.

Third party costs may be more explicitly captured in charges which reflect the capital and recurrent expenditure necessary to meet designated standards. Requirements on water authorities for tertiary treatment of effluent in some areas, or on motor vehicle manufacturers to control emissions to a given standard, add to the costs of supply of water and motor vehicles. Ideally, these cost imposts would need to be at least matched by cost reductions (or increased value of amenity) achieved by third parties affected by water and air quality.

Several participants raised concerns about the scope for incorporation of third party costs into infrastructure charges. The DHHCS said in relation to principles for setting infrastructure charges that:

... such theoretical concepts have significant limitations in establishing policy approaches if external costs are not measurable (Sub. 155, p.13).

The New South Wales Environment Protection Authority said:

... inclusion of environmental damage costs in the prices charged for servicing of land is still some way in the future. In such circumstances, less faith can be placed in market forces alone, to achieve efficient environmental outcomes and patterns of urban settlement.

This is particularly the case under conditions of uncertainty, where it will be important to recognise the risks and to ensure that if there are threats of serious or irreversible environmental damage, the lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (Sub. 150, p. 4).

The Queensland Government said:

Although a pricing driven approach to the determination of urban form has considerable merit, it is very difficult in practice, to capture, within prices, all of the externalities involved in infrastructure provision and consumption (Sub. 153, p. 1).

The NCPA noted the difficulty of expressing external costs in charges for infrastructure and said:

Not all externalities (e.g. congestion) can be adequately handled through some form of access or cordon charge.

If the \$ quantum of externalities associated with infrastructure use is known to be very large and if practical techniques for measuring and passing on these costs to users cannot be found, it is both inevitable and appropriate that regulation and planning will have to play a crucial if not leading role ... (Sub. 131, p. 9).

Vintila had more fundamental problems with the approach of recovering costs (including third party costs) in charges. He argued that a 'demand management' approach was needed to contain total resource costs. He referred to transport studies which called for the development of demand management strategies (Sub. 158, pp. 21-2).

Apart from infrastructure charging policy, there are a range of policy instruments which may be employed to achieve a given standard of (say) pollution control. These (including demand management techniques) fall into four major categories:

- moral suasion and education to modify the behaviour that causes third party costs (for example, provision of information about traffic conditions in particular areas and at particular times);
- regulation (for example, specification of allowable discharge quantities or specification of process and/or equipment);
- price incentive modification (for example, taxation, subsidisation, tradeable permits);
- public provision of facilities to control the third party cost (for example, provision of traffic speed humps and other 'traffic calming' measures).

There is no uniquely correct choice of instrument which applies in all circumstances. The choice of instrument (alone or in combination with each other or with infrastructure charges) depends on the trade-offs to be made between criteria such as dependability of the instrument in meeting the standard; efficiency (an efficient instrument is one which achieves the standard at least cost); information requirements; ease of monitoring and enforcement, flexibility; equity; and continuing incentive to reduce emissions further (IC 1991d, vol. 2, appendix D).

These instruments may be applicable not only to environmental but also to 'social' side-effects of urban settlement. The subsidised (and often free) public provision of social infrastructure and regulation of land use activity (for example, that affects visual amenity and public health) are about enhancing social benefits or reducing social costs. These issues are dealt with in part D.

B4 CHARGING IN PRACTICE

Charges for the provision of economic infrastructure and services usually comprise charges on households for access to and use of infrastructure, and developer contributions towards any augmentation of existing capacity resulting from new developments. Social infrastructure and services are typically financed from general revenue sources such as local council rates and State taxes, but the levying of developer contributions for this type of infrastructure is becoming more common.

The extent to which total charges (that is, developer contributions and recurrent charges) reflect the total costs of location, varies considerably.

For some important categories of infrastructure, while data limitations preclude a definitive assessment, the Commission was unable to confirm the large incentives to fringe location that it had expected on the basis of existing claims.

4.1 Introduction

This chapter describes the charging arrangements applying to hydraulic infrastructure, roads, energy infrastructure, public transport and social infrastructure and services. The principles discussed in chapter B3 are used to compare charges with costs in different locations.

The main focus is on whether the relationship between charges and costs in different areas biases incentives to locate in one place rather than another. In particular, it is concerned with whether there are undue incentives to develop the fringes of cities.

Recent studies of the relationship between costs and charges have tended to focus (on the charging side) on developer contributions and (on the cost side) on capital expenditures on new infrastructure provided to fringe developments (see appendix D). Such a comparison, however, can give a misleading impression about the extent of cost recovery for fringe developments. As the HIA noted:

So far as physical infrastructure is concerned, this argument [that fringe development is subsidised if up-front charges fail to cover the costs of providing infrastructure] confuses the distinction between the initial outlays on constructing infrastructure facilities and the adequacy of arrangements to recover this cost, which could occur either through upfront charges at the time of providing the facilities or over time through recovery of capital costs as a component of the charges for use of infrastructure services (Sub. 52, p. vi).

A more meaningful comparison would incorporate all upfront and recurrent charges and costs. It would take into account not only the developer contributions and capital expenditures that arise at the time the infrastructure is provided, but also those charges and costs that occur over time while the infrastructure is used. As the New South Wales Department of Housing said:

An analysis of empirical data showing the contribution to costs of service provision through direct user charges for key infrastructure, costs and contributions over time to financing and provision of urban infrastructure services through rates and taxes, and level of use of such services, would be necessary to determine which groups are being subsidized (Sub. 70, p. 5).

Such an approach has been followed by the Commission in its assessment of hydraulic services.

4.2 Hydraulic services

Periodic access and usage charges

Most public authorities providing hydraulic services use a combination of periodic access and usage charges (IC 1992, appendix C).

Property-based charges and base allowances continue to dominate the charging arrangements for water, despite increased charging based on use. For example, in its submission to the New South Wales Government Pricing Tribunal, The SWB said that only 13 per cent of the revenue from residential customers and owners of vacant land is related to usage charges. Of the remainder, 74 per cent comes from base charges and property taxes while the balance of 13 per cent is raised from the environmental levy (SWB 1992, vol. 1, p. 42).

For sewerage services, most authorities levy a single charge based on property values combined with a minimum charge. However, some authorities (for example, Australian Capital Territory Electricity and Water and Brisbane City Council) impose a uniform charge.

Special environmental levies are included in water and sewerage charges in some places. In Sydney, an \$80 annual charge is payable for environmental works such as upgrading ocean outfalls. In the Australian Capital Territory, sewerage charges include a \$25 component earmarked for environmental improvement projects such as the design and construction of grease traps and oil interception facilities.

Where specific stormwater drainage charges are levied, they are almost exclusively linked to property values. The SWB also levies a periodic flat access charge for residential and non-residential premises.

Charges that are based on property values, or are fixed, cannot reflect locational variation in costs. The SWB recognised this in its submission to the New South Wales Pricing Tribunal. It considered that costs vary greatly between areas and that this variation should be reflected in its charges to encourage efficient investment in infrastructure.

Per unit usage charges are generally the same regardless of where the household lives. Hence, they do not appear to reflect any locational variation in costs which may arise, for example, from pumping water to different locations.

Moreover, there is some evidence that charges do not reflect the costs of providing services to different *densities* of development. The SWB said in its submission to the Commission's inquiry on water resources and waste water disposal that there is significant under-charging of low density residential properties. Residents of flats and home units pay almost as much as single dwellings despite the fact that their demand for water and sewerage services can be less than half that of a single dwelling (Sub. 196 to the Commission's inquiry into *Water Resources and Waste Water Disposal*, p. 47). In the same inquiry, Melbourne Water said that the average price per kilolitre of water to a house in Melbourne was 66 cents compared with 91 cents for flats (Sub. 29, p. 9).

In this context, the NCPA said that:

To the extent that other factors make detached housing development easier on the fringe than in established areas (e.g. land values), these pricing policies imply an incentive for suburban expansion (Sub. 131, p. 11).

Nevertheless, the structure of charges may merely reflect the different costs involved in servicing different types (and density) of dwelling. For example, the pipe pressure required to supply water to higher buildings is greater and, therefore, more costly, than supply to lower buildings.

Developer contributions

Developer contributions include requirements for the provision of on-site hydraulic infrastructure and payments to public authorities for off-site infrastructure. The charging practices of some public authorities are given in table 1. Developer charges tend to be levied on a lot basis or by land area (for example, hectare).

While developer charges for off-site infrastructure tend to be levied on developments at the fringe, they are also sometimes levied on inner city development. The SWB has introduced developer charges for major works (that is, service reservoirs, large water mains, trunk sewers, main and branch sewers, and water and sewage pumping stations) in respect of development in established

areas where the development draws on infrastructure provided in the last 25 years (Sub. 70, p. 9).

Developer charges sometimes reflect differences in the cost of providing infrastructure to different (usually fringe) locations (see table 1). For example, Melbourne Water's developer charges for interim sewerage works vary from \$310 per lot in Plenty Corridor A to \$991 per lot in Keilor to an indicative \$1492 per lot in Plenty Corridor C.

The SWB's developer charges for major works typically range from \$43 700 per hectare in Campbelltown to \$99 300 per hectare in south Penrith. The Board said that its developer charges for established areas have usually been considerably less than those applicable to recently rezoned land where whole new systems are required.

How are charges calculated ?

Developer charges for off-site infrastructure are largely based on the initial capital expenditure. Authorities have quite different approaches as to which capital expenditure items are included and how they are allocated to a development.

The WAWA referred to several methods of determining the costs of 'major works' (defined by the authority to include dams, water treatment facilities, major sewage treatment plants and outfall works, large water mains and water pumping stations, trunk sewers, and sewage pumping stations) to be covered by developer charges. Of one method it said:

The total costs can be based on forward predictions of works assessed as necessary to meet the needs of authoritative land development forecasts for periods of (say) five, ten or even twenty years. With realistic estimating, this approach should reflect the marginal increase in unit cost as the areas difficult to service are developed and more expensive major works have to be constructed (Sub. 58, p. 15).

Another method is to use the average costs for the existing system. The WAWA noted that the derivation of the true cost of the existing system is subject to some debate. It said:

One approach [known as the modern equivalent asset value] is to take the total asset replacement value of all the major works. The asset replacement value is the value of all the works necessary to service the same demand and number of customers as at present if the whole scheme had to be rebuilt at this point in time (Sub. 58, p. 15).

Table 1: Developer charges for off-site hydraulic infrastructure levied by selected public authorities

<i>Agency</i>	<i>Off-site infrastructure subject to developer charges</i>	<i>Differentials in developer charges</i>
Sydney Water Board (NSW)	<p>In new areas, developer charges are imposed for major water and sewerage works (that is, service reservoirs, large water mains and pumping stations, trunk sewers, main and branch sewers, sewage pumping stations).</p> <p>In established areas, developer charges for water and sewerage are being introduced where there is a nexus between the development and works provided in the last 25 years.</p> <p>Subject to New South Wales Government approval, SWB is proposing to impose charges for sewage treatment and water headworks excluding dams on developments in new urban areas.</p>	Charges differ from location to location.
Melbourne Water (Vic)	Developers are charged for 'category B' works (that is, collection sewers, zone and regional distribution water mains and main drains) but are not charged for 'category A' works (that is, water supply headworks, major sewage treatment plants and outfalls).	Limited locational variation in charges (for interim sewerage works in particular areas and for different land zonings) and differential in charges between residential, industrial/commercial and other properties.
Water Authority of Western Australia (WA)	Developers are charged for hydraulic 'headworks' (that is, dams, major seasonal water storages, water treatment facilities, and aqueducts, major sewage treatment plants and outfall works, main drainage works).	Charges vary according to whether lots are larger than 600 square metres or less than 600 square metres and whether they are in a particular zone.
Brisbane City Council (Qld)	Developers are charged for water and sewerage 'headworks' (that is, treatment and distribution works).	Some locational variation. Differential in charges according to land zonings.
The Engineering and Water Supply Department (SA)	<p>Developers are not normally charged for water and sewer headworks but some charge applies for pumping works, regional 'headworks' and distribution in the case of land zoned as deferred urban or rural.</p> <p>Developers are charged for the 'approach mains'.</p>	No differential.

Source: AWRC 1992.

The SWB calculates its developer charges for major works on the basis of the actual capital costs of works (which it transforms to current costs) constructed within the last 25 years to serve a particular release area. The cost of providing services reflects the physical characteristic of each water supply zone and sewerage catchment.

The Hunter Water Corporation uses a financial model to assess developer contributions for each development (described in chapter B3). The model incorporates not only upfront costs and charges but also recurrent cash flows. The Corporation said that while its model takes account of the differences in capital costs of servicing different locations, averaged operating costs are used because of data limitations. The Corporation said that:

... to the extent that operating costs differ [between locations], some small cross subsidies between locations will remain (Sub. 140, p. 3).

How do charges and costs compare?

Only limited comparisons of charges and costs are available. Some comparisons have focused on developer contributions and the initial capital expenditure required to provide the infrastructure. Others have focused on a comparison of capital and recurrent costs and charges in a particular year (for example, the Australian Local Government Association and the New South Wales Treasury).

In most areas, including major metropolitan areas, charges levied on developers for off-site hydraulic infrastructure recoup less than the capital costs. For example, the SWB said that developer charges ‘theoretically’ recover about 87 per cent of the initial capital expenditure on ‘major works’ and a small fraction of ‘headworks’ which are designed and constructed to meet anticipated densities. The Board said this occurs:

... due to a combination of factors, including the use of historical cost accounting practices and the subsidisation of some specific areas for reasons of affordability (Sub. 70, p. 9).

The Australian Local Government Association said that charges and developer contributions for water supplied by local government in New South Wales, Queensland and Tasmania met 5.8 per cent, 9.5 per cent, and 1.8 per cent respectively of annual average net payments (defined as local government expenditures on capital and recurrent costs net of reimbursement from State governments) on water supply over a ten year period ending 1988-89 (Sub. 61, p. 5). With regard to stormwater drainage and sewerage, charges and developer contributions accounted for 8.8 per cent and 104.4 per cent of annual average net payments, respectively, by local government in all States and the Northern Territory over the 1979-80 to 1987-88 period. There were considerable

differences between States. For example, charges and developer contributions as a proportion of net payments on sewerage ranged from 124.6 per cent in Tasmania to 41.6 per cent in South Australia (Australian Local Government Association 1992).

There is also some evidence that cost recovery rates vary between locations. A New South Wales Treasury study found that recurrent cost recovery rates for the SWB were 100 per cent in the inner metropolitan area but only 44 per cent in the outer metropolitan area. It stated that:

The lower level of cost recovery for the outer metropolitan area largely reflects the higher cost of inland (as opposed to ocean) sewage treatment plants. This is where most urban expansion is occurring, encouraged in part by not having to meet the full costs of providing public utility services in these more remote locations (New South Wales Treasury 1992, p. 17).

As part of this inquiry, the Commission made its own comparison of charges and costs for hydraulic infrastructure provided to various locations within Sydney and Melbourne on a basis that included upfront and recurrent charges and costs (see appendix D for further details). Relevant recurrent charges include water and sewerage rates, water usage charges, and the special environment levy in Sydney. Relevant recurrent costs include asset replacement costs, maintenance and operation costs, and administration costs.

Some qualifications and assumptions

There are a number of limitations to the analysis, reflecting the lack of appropriate data. While the authorities have some indication of the locational variations in upfront costs, they have less knowledge as to how recurrent costs vary. Moreover, in relying on available data, the analysis must assume that the authorities have appropriately identified and attributed the incremental costs of providing infrastructure to developments. These limitations are particularly pronounced for the analysis of inner areas. While the analysis reflects the actual charging policies of the authorities, in respect of developments in inner areas, arbitrary assumptions have been made about costs.

Caution is needed in interpreting the absolute level of any under- or over-recovery of costs. The levels should be treated as being indicative rather than definitive.

As with all such exercises, the results can be affected by the discount rate chosen. The discount rate assumed for the analysis was 5 per cent. This was recommended by the Commission in its report on *Water Resources and Waste Water Disposal* as an appropriate rate of return for authorities to achieve in most cases (IC 1992).

The discount rate used in the analysis is not intended to reflect requirements imposed on particular authorities to earn a high rate of return. State governments may require high dividends (for example, in Victoria). Authorities are sometimes required to include items in the measurement of revenue (for example, the transfer of developer contributed assets) which may by some definitions overstate income. This can also affect taxation or payments in the nature of taxation. Nevertheless, to test the sensitivity of the results, estimates based on a 10 per cent discount rate were also obtained (see appendix D).

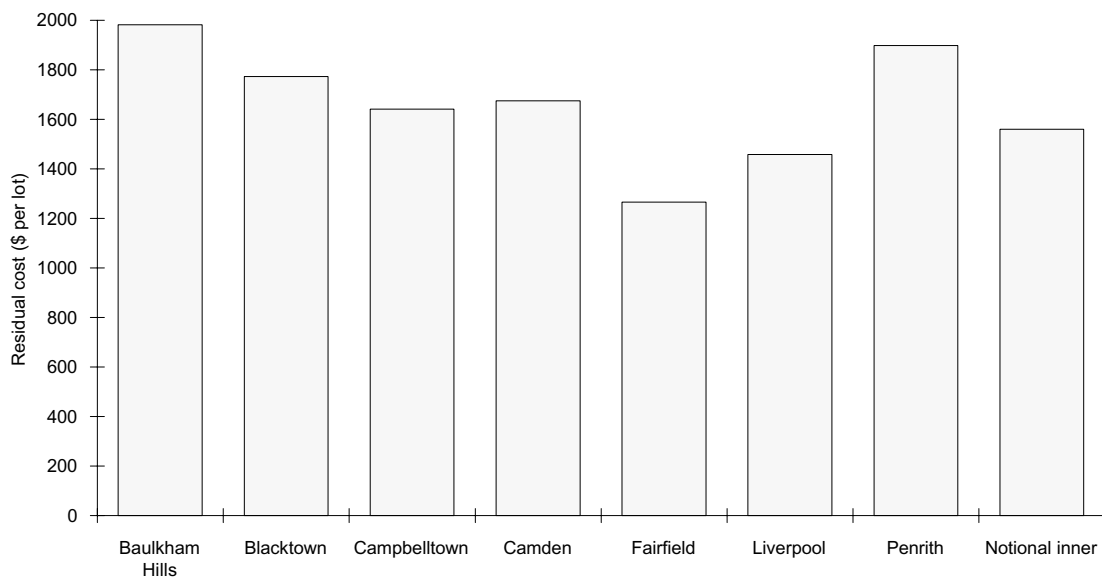
Results

The Commission's analysis found residual costs in providing water and sewerage infrastructure to the fringe in both Sydney and Melbourne (figures 1 and 2). The results for Sydney and Melbourne are not comparable because of different accounting methods used by the authorities and different databases. For Sydney, average residual costs for the fringe are estimated at about \$3900 per lot for both types of infrastructure. For Melbourne, average residual costs are estimated at about \$2500 per lot. These residual costs compare with total costs of providing water and sewerage infrastructure of around \$25 000 in Sydney and \$19 000 in Melbourne. If accurate, these estimates imply that total charges for both water and sewerage infrastructure would have to increase by an average of 16 per cent for Sydney and about 14 per cent for Melbourne to remove the estimated subsidies.

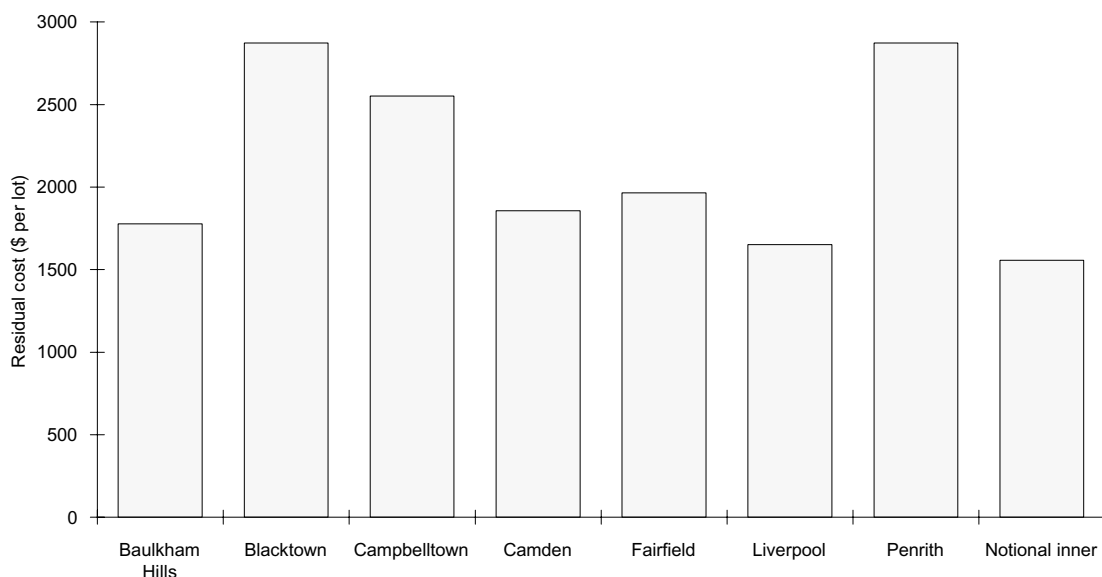
Among fringe locations, there is some variation in the estimates of residual costs of both water and sewerage infrastructure estimates. Residual costs at the fringe of Sydney vary from \$3100 per lot in Liverpool to almost \$4800 per lot in Penrith. In Melbourne, the variation is much smaller, with residual costs varying from \$2500 per lot in South Eastern and Plenty to \$2700 per lot in Werribee.

For a notional inner location, there was estimated to be residual costs of providing water and sewerage infrastructure in Sydney (although less than the average for the fringe) and residual payments in Melbourne (compared with residual costs for the fringe). In Sydney, charges to inner areas would have to increase by about 40 per cent for the estimated subsidies to be reduced to zero. In Melbourne, charges would have to decrease by 24 per cent to eliminate overpayments.

Figure 1: **Sydney: water and sewerage infrastructure residual costs 1992 (5 per cent discount rate)**



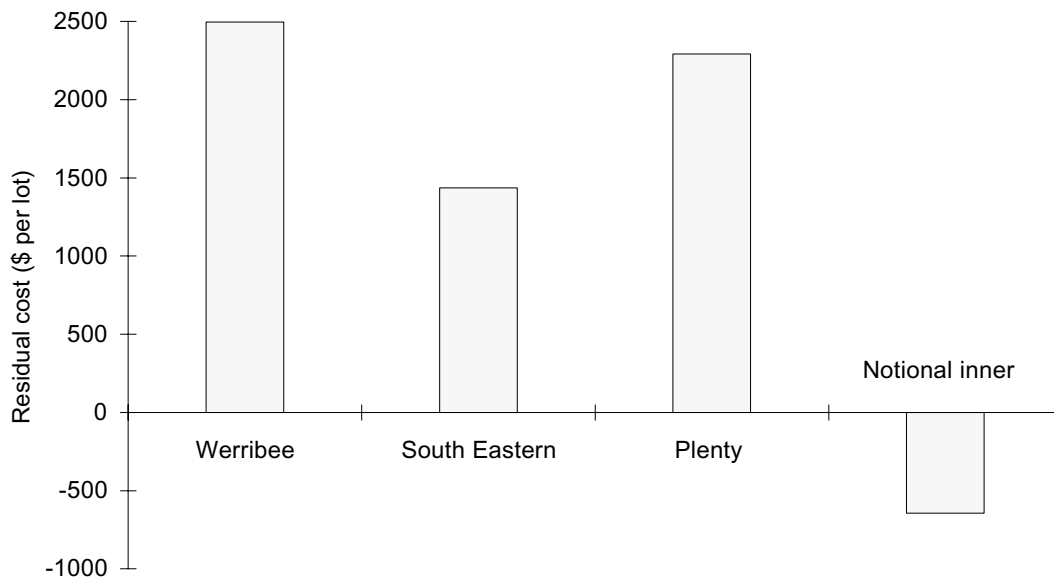
Water



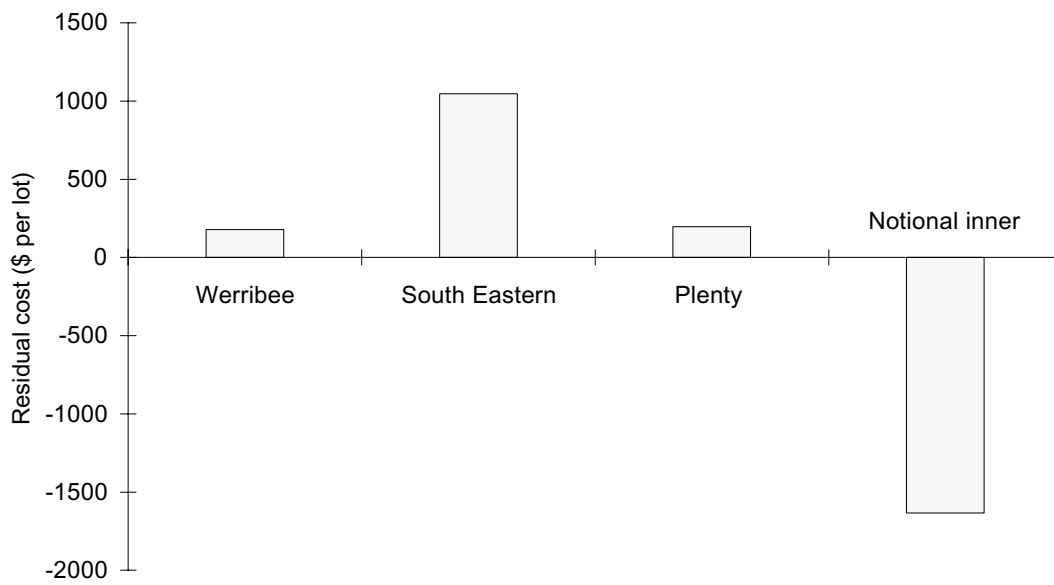
Sewerage

Source: Appendix D.

Figure 2: **Melbourne: water and sewerage infrastructure residual costs 1992 (5 per cent discount rate)**



Water



Sewerage

Source: Appendix D.

Implications

Data problems, particularly for inner areas, and the differing accounting approaches taken by authorities, preclude any inferences from comparing Sydney and Melbourne and from the absolute estimated levels of subsidies and overpayments. Nevertheless, the results provide some indication of the pattern of subsidies and overpayments across locations.

The results for Sydney and Melbourne indicate more cases of under-charging than of over-charging. But under-charging is apparent among residential areas throughout the cities. Only in Melbourne is there an appreciable difference favouring the fringe over inner areas. (Melbourne Water has indicated that its charging arrangements are under review). Given limitations of the data and consequent margins for error – as well as the fact that the estimates are discounted present values of (much smaller) annual sums – **the Commission's estimates do not confirm a significant inducement to fringe location in either city.**

A question arises as to the pattern of cross-subsidies, given that both authorities are obtaining a positive rate of return overall. Melbourne Water suggested that any subsidies to fringe developments are being paid for by domestic customers in inner areas, and by industrial and commercial customers. The SWB said that the subsidies for all its domestic customers, whether in the fringe or in inner areas, are being paid for by industrial and commercial customers. The SWB's prices are currently the subject of inquiry by the New South Wales Government Pricing Tribunal.

Participants' responses

Several participants raised concerns about the Commission's analysis and conclusions.

The DHHCS was concerned that the results were:

... so much at odds with other sources (Sub. 155, p. 14).

A major reason for any divergence between the results from the above analysis and from other studies is methodological. The Commission is unaware of any study that properly examines the subsidy (or overpayment) associated with the provision of infrastructure to particular developments. Existing studies are deficient in their coverage of relevant costs and revenues. Many studies have focused either on cost savings (or savings in outlays) from urban consolidation or on the difference between upfront costs and charges. As discussed in chapter B2, cost savings from urban consolidation do not necessarily mean that fringe development is subsidised relative to established areas.

Another reason for the divergence is that the analysis focuses on infrastructure provided to and used by residents. The New South Wales Treasury study which examined recurrent cost recovery rates by location in Sydney encompassed services provided not only to domestic customers, but also to industrial and commercial customers.

Vintila considered that the Commission's analysis:

... fails to provide any information about the pattern of total costs. Even if one allows that the fringe is largely paying its own way – and there is at least room for doubt here – what is happening to the total costs picture (encompassing public, private and external costs) as cities continue their present patterns of low density expansion and dispersion? (Sub. 158, p. 12).

The analysis takes into account the pattern of total revenues and of total costs. In relation to the inclusion of external costs, the estimates reflect environmental costs to the extent that the authorities incur expenditure on infrastructure (for example, sewage treatment processes) to meet given environmental standards; there is no apparent locational bias in that expenditure as between established and fringe urban areas.

4.3 Roads

Road user taxes and charges

A variety of taxes and charges are levied on road users:

- the Commonwealth Government imposes an excise on fuel (currently 26.232 cents per litre of motor spirit and distillate) and a charge on heavy vehicles under the Federal Interstate Registration Scheme;
- State governments impose motor vehicle registration fees, drivers' licence fees, fuel franchise fees, road transport and maintenance taxes, and road tolls; and
- other taxes and charges for road use include the payments of public transport authorities (particularly buses) to local councils for the use of roads.

The revenues raised from Commonwealth and State road user taxes and charges in 1989-90 are shown in table 2. Nearly 65 per cent of the total is currently raised from the Commonwealth excise.

Payments for road access and use

Motor vehicle registration fees and drivers' licence fees operate like a periodic charge for road access. Payment is obligatory to permit driving of and access by a

motor vehicle to a public road. The fees are largely fixed and hence unrelated to the time of travel and distance travelled. They do not apply to a particular road or otherwise reflect location.

Table 2: Road user payments, 1989-90^a

<i>Road user tax or charge</i>	<i>\$ million</i>	<i>Per cent of total road user payment</i>
Commonwealth		
Petroleum product excise ^b	5082	64.5
Australian Capital Territory motor vehicle taxes ^c	21	0.3
Federal Interstate Registration Scheme	17	0.2
Total payments to Commonwealth Government	5120	65.0
State ^d		
Registration fees	1347	17.1
Drivers' licence fees	268	3.4
Fuel franchise fees	1016	12.9
Road transport and maintenance taxes	48	0.6
Tolls ^e	76	1.0
Total payments to State governments	2755	35.0
Total road user payments ^f	7876	100.0

a Excludes user payments not unique to road users, such as stamp duty, customs duty, sales tax and fines.

b Derived from estimates published by the Australian Institute of Petroleum. From 1987-88, the revenue from Commonwealth excise on fuel and heating oils and kerosene is included in road user payments. The excise on fuel and heating oils and kerosene comprises 1 per cent of revenue from fuel.

c This reflects the payment of motor vehicle taxes in the Australian Capital Territory received by the Commonwealth Government prior to self-government.

d This includes revenues raised from Australian Capital Territory motor vehicle taxes since self-government.

e The component of the toll payment relating to Queensland is collected by private companies and is for the period to 31 March.

f Totals may not add due to rounding

Source: BTCE 1992.

Fuel taxes are often regarded as a proxy road use charge. Payments vary directly with fuel consumption and, thus, with distance travelled by road. They may have some indirect impact on where businesses locate and where people choose to live and work. For example, they might be sufficient to induce some people to live close to their work. To the extent that fuel taxes affect motor vehicle use, they may also reduce pollution and congestion.

Motorists are also directly charged for the use of some roads through tolls. For example, tolls are levied for use of the Sydney Harbour Bridge and the F4 Freeway. While it is possible to vary tolls according to the time of day, this rarely occurs.

Pollution and congestion costs are not directly charged for on a periodic basis, although the latter may be indirectly captured in peak load pricing for public transport.

Some attempts have been made to estimate pollution and congestion costs (see appendix F). The ISC estimated the cost of atmospheric pollution from road use for Australia to be about \$787 million in 1989-90. Of the total, \$674 million was attributed to air pollution from motor vehicles and \$113 million from heavy vehicles. A preliminary assessment prepared by Vic Roads (1992) indicates that the costs of congestion is around \$2 billion a year in Melbourne. A similar figure has been calculated for Sydney. The BTCE concluded that Australia-wide costs could be as much as \$5 billion (Sub. 143, p. 2).

A broad issue arises as to whether payments for road access and use cover the costs of roads in aggregate. This has been examined recently by the National Road Transport Commission (1992). It estimated that in 1988-89, road user costs (relating to road track, accidents, noise and pollution) were \$10.8 billion compared with revenues (raised from fuel taxes, motor vehicle registration fees, and other taxes and charges) of \$14.8 billion. However, these estimates cover all road users, not just motorists, and cover inter-urban as well as intra-urban travel.

While road usage charges may need to be quite high to achieve sufficient reductions in traffic to alleviate congestion, they are not needed in all locations or at all times of the day. Fuel taxes, however, are not a very effective mechanism for dealing with congestion as they do not reflect the origin or destination of travel (that is, location of travel) or the time of day in which travel occurs. As Neutze said:

Fuel taxes are a rather blunt way of charging the marginal cost of use of through roads: they do not rise with congestion fast enough to reflect the increasing scarcity and, therefore, value of road space, but there is not yet adequate technology for collecting congestion taxes (Sub. 12, p. 6).

Neutze suggested that fuel taxes are too high for the uncongested roads in the outer suburbs and too low for the congested roads in the inner suburbs, especially the inner arterials. Because there is a shortage of road capacity in the inner area roads and the marginal cost of increasing that capacity is high, charges for road use should be high (Sub. 110, p. 2).

In short, fuel taxes (depending on the proportion designated as a charge for road use) can either be quite high or low in specific locations compared with the marginal costs of using roads, and are therefore an imprecise way of charging for road use.

Although electronic road pricing is not used in any Australian city, it is currently used in overseas cities such as Singapore. The adoption of this kind of technology is under consideration by some roads authorities. The New South Wales Roads and Traffic Authority (RTA), which intends to explore congestion pricing options, said:

Various forms of congestion pricing are available for consideration: cordon rings around large attractors such as the CBD; area pricing schemes and traffic cells; route pricing where certain arterials are tolled; and congested time pricing where vehicles are charged while in a zone if their vehicle is travelling at reduced speeds or is stopped by congestion (Sub. 70, p. 8).

The absence in Australia of electronic road pricing illustrates the practical difficulties of implementing road user charges. The difficulties are associated with the costs of collecting charges in situations in which collection points are expensive to maintain and users can readily alter routes. The Adelaide Planning Review said:

The South Australian position is to monitor developments in other, more congested cities and not to consider implementing congestion pricing until the benefits (reduced congestion and associated externalities) outweigh the costs (which are being reduced by technological advances). As capacity becomes over-extended (on most routes this is some way off) and as technological advances reduce the cost of implementation, road pricing will become a more attractive tool to manage urban infrastructure (Sub. 88, p. 5).

Developer contributions

Developers generally bear all the upfront costs of on-site road works. Hence, developer contributions for these roads directly reflect locational costs. Table 3 provides an indication of the locational variation in developer contributions for on-site roads in various fringe areas of Brisbane. Costs per lot range from \$7100 in Wishart to \$13 200 in Carindale. However, these differences may be due not only to varying terrain, but also to varying lot sizes and road standards.

Table 3: Upfront costs incurred by developers on on-site roads, Brisbane, 1992-93 (\$ per lot)

<i>Suburbs</i>	<i>Upfront cost</i>
Bellbowrie	9 064
Wishart ^a	7 107
Eight Mile Plains ^b	12 137
Calamvale	12 790
Carindale	13 206
Forest lake	8 138

a Subdivision: Wishart outlook – stage 8.

b Subdivision: Padstow street.

c Subdivision: Parkland village – stage 4.

Source: Sub. 162, p. 6.

With regard to off-site road works, developer contributions are increasingly sought by public authorities (particularly local councils). For example, in Western Australia, councils require developers to contribute to works on ‘district distributors’ (that is, roads which carry traffic between industrial, commercial and residential areas, and link these cells to the primary network) within and sometimes abutting a new development. The contribution can consist of the provision of land for the roads, the carrying out of earthworks, and the provision of one carriageway for a dual carriage way road (Sub. 49, p. 7).

In New South Wales, developer contributions can be levied by local councils under section 94 of the *Environmental, Planning and Assessment Act 1979* for off-site road works which they have a responsibility to maintain and for which there is a nexus between the proposed development and the need for the additional works. The contribution extends to the maintenance of roads exhibiting excessive wear and tear resulting from a development. Where the RTA shares responsibility for off-site road works with a council, it can transfer full responsibility for road works to the council which is then able to levy contributions. However, the RTA said that:

... some developers do not pay the full impact of their development costs on the road system. For example, under Section 94 the Council can only levy contributions for effects within the geographical boundary of the local government area concerned. Damage to roads in adjacent local government areas, and on fully RTA managed roads eg. freeways, cannot be recovered (Sub. 70, p. 2).

The New South Wales Department of Planning has issued guidelines to assist local councils in estimating the proportion of works costs to be met by developer contributions under section 94. According to these guidelines, contributions for off-site road works are to be based on capital costs, although road maintenance costs may be recovered in certain circumstances. The level of developer

contribution depends upon the nature of the area, the proposed rate and size of development and the capacity of existing amenities and services (New South Wales Department of Planning 1992).

While developer contributions for State government roads are not common, some authorities are either beginning to require contributions or are looking into the possibility of doing so. For example, the RTA is negotiating with the Rouse Hill Infrastructure Consortium to bring forward planned arterial roads works for the north-west corridor in Sydney in return for a financial contribution of \$22 000 per hectare. This compares with an estimated capital expenditure of \$365 million in March 1989 dollars or about \$122 000 per hectare (assuming that the land to be developed in the area is 3000 hectares). The Authority is proposing that legislation be introduced in five to eight years time to give the authority the power to levy developer contributions and special recurrent charges (Sub. 70, p. 9). In South Australia, the Commissioner of Highways can demand a contribution from a major traffic generator if arterial capacity needs or will require expansion as a result of its activities (Sub. 56, p. 17).

Some authorities are also considering levying charges on developers for the costs of congestion. For example, Brisbane City Council is considering an impact-type charge to recoup some of the cost of congestion caused by land development and the resulting need for augmentation of capacity. It said that the charge relates to:

... a general concern that the Council has had ... since undertaking the Brisbane traffic study, which was a very major study of particularly private car movements and road network issues within the Brisbane metropolitan area ... and the costs to the rate payers of Brisbane for the provision and maintenance of a metropolitan arterial road network and a public transport system which is used by a greater population or a wider catchment than the Brisbane city area ... Brisbane city is bearing costs that relate to a broader constituency than Brisbane city ratepayers (DR transcript, p. 154).

The Council further added that:

Within selected Development Control Plans there is a provision for a levy to be placed on each unit within a development at the time the development application is approved. The levy is designated for road and traffic improvements within the Development Control Plan area or closely related traffic facilities. A second situation in which an impact fee is being developed relates to large subdivisions and is based on projected costs of increased traffic flows resulting from the completed subdivision ... In essence, the total projected relevant costs are expressed as a cost per block and this amount (subject to CPI indexing) is proposed as an impact fee (Sub. 156, p. 2).

How do charges and costs compare?

Data on upfront and recurrent charges and costs associated with providing roads to development at various locations is not readily available. During the inquiry, the Commission contacted several road authorities to seek data but was unsuccessful. While it received some information, this was insufficient to do a detailed analysis of the pattern of subsidies associated with roads provision and use in particular locations. A study on roads similar to that described in section 4.2 for hydraulic services was, therefore, not undertaken for the final report.

The Commission sees value in having such studies (and the associated data collection) pursued at a regional level. They could shed more light on the pattern of subsidies associated with the provision of roads, and benefit road authorities in the determination of charges within their control, particularly developer charges for off-site roads.

Charges

On the charging side, data would be needed on upfront and recurrent charges in inner and fringe areas, in particular: on developer contributions such as the provision of road works or payments; fuel tax payments by households; and motor vehicle registration fees and other periodic road access payments.

- *Fuel tax payments*

The treatment and measurement of fuel tax payments raise a number of concerns. One concern, relates to the amount of the payment that should be regarded as a road user charge. In practice, however, it is the difference in payments among parts of the city – rather than absolute payments – that is important.

A second concern relates to the availability of data on fuel tax payments by location. To obtain information at this level of detail would require a survey of households living in particular developments as to their use of the roads. Such a survey could obtain data on fuel consumed on trips.

In their study of transport cost savings, Newman, Kenworthy and Vintila calculated the fuel costs associated with inner and fringe developments in Perth. They did this by estimating the annual vehicle kilometres of travel from surveyed travel patterns of households around the proposed development and applying a fuel consumption rate – obtained from the ABS Motor Vehicle Usage Survey – which was adjusted where possible for the type of vehicle and congestion (see NHS 1992b).

Costs

In addition to information about upfront and recurrent charges, a roads study would require data on costs in different locations. This would include the attributable costs of construction, maintenance and replacement associated with development in new and established areas. These costs cover the initial outlays incurred by developers on on-site roads and by roads authorities on off-site roads. Also relevant are social costs such as congestion. Some participants noted that the opportunity cost of capital was also relevant. The DHHCS said that:

Attention needs also to be given to the ... return on investment in attempting to determine levels of cost recovery (Sub. 155, p.14).

- *Direct financial outlays*

Although, information about upfront and recurrent road costs attributable to developments is scarce, especially for inner areas, the information in table 4 provides some insights as to how they differ by location.

Table 4: Upfront and recurrent road outlays in inner and fringe areas, Brisbane City Council, 1992-93 (\$ per lot)^a

<i>Nature of cost</i>	<i>Inner city^b</i>	<i>Fringe^c</i>
Capital	14 860	8 160
Recurrent	1 121	524

a Costs include traffic operations and are indicative only.

b The costs apportioned to inner city lots is based on developments and recurrent costs for works district C5 which includes the central business district and immediately adjoining suburban areas.

c The fringe area costs per lot is calculated as the total of all Brisbane costs less the district C5 costs with the result divided by the number of residential lots in Brisbane that are not in district C5.

Source: Sub. 156, p. 1.

The Brisbane City Council noted that the costs in table 4 are only indicative of locational costs as there is large variability in road costs in different parts of Brisbane. The table shows that the costs are higher in inner areas than in fringe areas. The Council explained that:

By the nature of the land use, the cost of road maintenance and traffic operations is higher [in inner areas] than for Brisbane suburban areas and correspondingly there are fewer residential properties over which to divide those higher costs (Sub. 156, p. 1).

In relation to capital outlays on off-site road works, a recent report for Brisbane and South East Queensland found that while existing urban sites under consideration were generally adequately serviced by the arterial road network, augmentation of major intersections and better separation of local and through traffic were 'primary issues'. It further noted that about half of the cost of upgrading arterial roads in existing areas related to land acquisition. These costs were contrasted with those associated with servicing new development areas where the major cost was augmentation of the arterial road network between the site and the CBD or nearest regional centre (Sinclair Knight 1993).

Measurement of such off-site road costs caused by a development may not be straightforward. In relation to attributing arterial roads costs to a particular development, the Department of Road Transport of South Australia said that:

... increased traffic on an existing arterial road link resulting from the development could bring forwards the need to increase that link's capacity. But the need to increase that link's capacity is also due to other urban developments contributing to the growth in traffic, and consequently it is difficult to determine what portion of the cost of providing additional capacity should be assigned to the particular development ... The Department has not considered the allocation of arterial road costs for a particular development on a per lot basis (Sub. 154, p. 1).

Nevertheless, the Commission notes that Sinclair Knight's (1993) study of Brisbane and South East Queensland applied an estimation procedure to determine arterial road augmentation requirements (and hence costs) for particular areas.

- *Congestion costs*

Any road study which includes congestion costs would have to focus on the incremental impact of a development on traffic levels and, hence, delays. Congestion may be caused by both inner and fringe development and may not always be in proximity to the development. For example, fringe development may contribute to congestion on inner city roads.

It is not possible to state generally that inner development would generate greater or smaller congestion costs than fringe development. Much depends on the travel patterns of households. For example, Herve Commeignes (1991, p. 3) noted that in Sydney, the worst congestion occurs in the outer suburbs. However, Vic Roads has estimated that approximately 22 per cent of the congestion costs in Melbourne occur in the central activity district, where economic activities are concentrated (p. 15, p. 20).

Apart from the direct impacts on congestion that a development may cause, there are other related responses that may need to be considered. First, with increases in congestion, road users may choose to switch to public transport and, given

widespread public transport deficits, this may enlarge the existing deficits. Second, road authorities may choose not to augment road capacity at all, but instead implement various demand management policies, including encouraging the use of public transport.

The second situation could arise where authorities decide that capacity augmentation is prohibitively expensive. For example, the Department of Road Transport of South Australia said that road widening to increase capacity may require expensive property acquisitions and service relocations. The Department said that congestion in these circumstances could be addressed by a range of demand management measures including peak spreading and increased vehicle occupancy in order to improve asset utilisation, area limitations, link limitations, and parking limitations (that is physical restraints). Brisbane City Council and the RTA also promote the use of public transport.

The relevant costs caused by a development, may, therefore include not only costs that are incurred by road authorities (to manage demand) and by public transport authorities but also the costs of any congestion that remains (because of increases in demand).

Measuring congestion costs raises several issues. First, it may be difficult to attribute changes in traffic volumes to a single development. For example, while it may be possible to identify the impact on traffic volumes caused by a single development at a particular time, attribution problems may arise when there are many developments occurring at the same time with each contributing to traffic volumes. In addition, people from other parts of the city may also make trips to the new development for jobs or other services and contribute to congestion.

A second measurement issue arises in determining an appropriate benchmark of travel delay. Herve Commeignes (1991) noted that congestion could be measured as the delay obtained by the difference between 'actual and free-flow travel time'. Travel delay can also be approximated by travel speed. Herve Commeignes noted that the National Roads and Motorists' Association considered a speed below 40 kilometres per hour on arterial roads as unsatisfactory (p. 2).

Finally, a measurement issue relates to the value assigned to delays experienced by road users. Often the value used relates to a wage rate (as an approximation of the opportunity cost of waiting in congested traffic). For example, Herve Commeignes (1992) indicated that the value of travel time savings is estimated at about \$7 per person-hour for private car users and \$43 per vehicle-hour for business cars (pp.1, 2).

Charges and costs overall

It is not clear from information available to the Commission whether the degree of cost recovery for inner city development (which generates increased pressure on existing roads) is different from that for fringe development (which has the requirement for new capacity).

While the costs of provision for *on-site roads* are generally borne by the developers, the responsibility of maintenance often lies with the local councils. A question arises as to the locational variation in recovery of this recurrent cost.

In relation to *off-site roads*, developer contributions do not, at present, match attributable capital costs in different locations, let alone the recurrent costs. The under-recovery of attributable off-site road costs may favour fringe areas as there are more new road works in these areas than in inner areas. (Under-recovery may favour inner areas where relatively expensive augmentation of existing road capacity is required.) A number of road authorities have indicated that they prefer demand management measures to augmenting road capacity in inner areas. Cost of augmentation is often prohibitively expensive.

The impact of development location on congestion and pollution costs is not clear. It will depend on the extent of motor vehicle use by inner and fringe residents (likely to be greater at the fringe); the location of congested areas and pollution generating areas (likely to be greater in inner areas, but also occurring in fringe areas); and the travel patterns of households (inner residents are more likely to travel in areas generating greater congestion and pollution, but fringe commuters making radial journeys can also contribute).

In sum, whether a greater subsidy exists in newly developed areas compared with established areas is unclear, and will depend on a number of factors including where developments occur and the circumstances in each city.

Nevertheless, if charges and costs were matched in all locations, any biases in location incentives would be minimised.

The use of electronic road pricing could be an important step towards better matching of charges and costs imposed. However, in practice, the use of this technology would depend on the cost of implementing it.

A better match between charges and costs could also be achieved by increasing the scope of developer contributions. In the draft report, the Commission recommended that roads authorities be allowed to levy charges on developers to cover the costs of providing and improving higher level roads. It emphasised

that the charges should be clearly identified. Some participants agreed with such an approach. For example, the RTA said:

Transport agencies, particularly including road authorities, should have the facility to levy clearly identifiable charges on developers to cover the transport costs associated with new developments in existing and fringe areas (Sub. 150, p. 2).

The South Australian Government said that:

It is agreed that public transport and road extension costs arising from new urban developments are substantial and research indicates that they collectively comprise about 40% of the estimated State capital works required to service fringe urban areas ... Under existing planning and land division legislation, there is no provision for councils or the main road authority to charge for additional road capacity outside of the site being subdivided (Sub. 161, p. 10).

However, a number of participants expressed concerns about the levying of charges on developers for off-site roads.

For example, Wilbow Peck Corporation (Qld) argued that charging developers for off-site roads should only be done where there is clear nexus between the development and the expanded road usage. They added:

... it is a classic example of where petrol excises are not being properly applied, and that is one area of consolidated revenue from which those sorts of expenses and those sorts of infrastructure [off-site road works] allocations should be made ... developers already fund significant amounts of external roads – that is external to their subdivision (DR transcript, p. 215).

The UDIA said that:

... it is inappropriate for those in new areas (or indeed in an established area in which redevelopment is taking place) to fund changes to, or additional, higher level roads which are used predominantly by the wider community. Adding unnecessary costs will impact adversely on pricing and hence reduce affordability (Sub. 106, p. 4).

Jennings Housing expressed similar concerns by indicating that policies such as charging developers for off-site road works should be limited to those items directly related to the development and peculiar to that development, and should not be actual network costs (Sub. 124, p. 4).

The HIA said that:

... off-site roads which are servicing the whole neighbourhood would fall in the general category of cost to be borne by the community (DR transcript, p. 484).

The establishment of a nexus between the development and off-site road works is clearly central to the levying of developer charges. Although the wider community can benefit from off-site road works, this should not preclude any attributable costs of these works (where they can be estimated) from being assigned to developments. **The Commission recommends that road authorities**

should be allowed to levy clearly identified charges on developers to cover the costs of providing and improving higher level roads attributable to new developments. The Commission also considers that authorities should publish the basis by which such developer charges are calculated. This would include an assessment of the development's projected impact on traffic levels.

The Commission notes that some authorities are considering the imposition of a congestion charge on developments. Such a charge may be useful in recovering the congestion cost caused by a development and, hence, signalling any locational cost. However, there may be practical difficulties in attributing congestion to a particular development. In the event of congestion charges being levied, the Commission considers that they should relate only to the incremental impact of development on traffic levels. Further, authorities should make public the basis by which such charges are calculated.

Future asset replacement (or maintenance) is also rarely included in road charges. One possibility would be to adjust the level of periodic access charges (for example, motor vehicle registration fees) to cover that cost. Where roads are provided to different standards in different areas, periodic access charges could vary accordingly. An alternative would be to require developers to pay for future asset replacement.

Yet another possible charging mechanism involves special beneficiary levies on property owners in particular areas where road provision provides demonstrable gains to them. Unlike developer contributions, these levies can be applied at the time of road improvement after development of new dwellings. Where they apply to new development, they serve a similar purpose to developer contributions. The RTA said that:

... there should be a facility to use special levies to raise contributions from property owners for the costs of roads and other transport infrastructure which has been provided on the basis of their demonstrated demand patterns (Sub. 150, p. 2).

This is to be distinguished from 'value capture' mechanisms which:

... attempt to reap some of the benefits of increased land value resulting from the addition of new infrastructure, from the land owner beneficiaries (Sub. 150, p.2).

The RTA saw some disadvantages with levies based on land values:

Land value capture will involve winners and losers and the size of the land value increase due to the infrastructure is open to question (Sub. 150, p. 2).

The Authority went on to argue that special beneficiary levies:

... may be superior to land value based levies. This contribution framework can be based on the potential use of a facility by the land owners, the very basis of the rationale for providing that infrastructure (Sub. 150, p. 2).

The Commission will be examining road charging options in more detail in its current inquiry into urban transport.

4.4 Public Transport

Periodic access and usage charges

The use of different transport modes is dependent to some extent on the nature of individual demand for travel. For example, individuals may integrate travel by rail, which exhibits a radial pattern of transport, with travel by bus which can be circumferential.

Trains, buses, trams and ferries

The Commission recently examined the fare structures of urban rail authorities in selected capital cities (IC 1991f, vol. 1, table 8.2). Rail fare structures tend to increase with either distance or the number of zones travelled. A similar situation applies to services by other modes of public transport.

Fare tickets commonly cover the use of a particular mode of transport. The use of inter-modal fare tickets, which would enable individuals to integrate their journeys, varies among cities (for example, they are common in Perth, Adelaide and Melbourne but not in Sydney and Brisbane).

Concessions are usually offered on periodical tickets and to categories of users such as pensioners, students and children.

Some participants suggested that fares do not vary sufficiently to reflect locational costs. The New South Wales Department of Transport said that a weekly train ticket from Katoomba (located 105 kilometres west of Sydney) to the City is priced at about 2.9 cents per kilometre compared with a ticket between Petersham (an inner Sydney suburb) and the City of 13.3 cents per kilometre (Sub. 70, p. 8). However, this could merely reflect the fact that fixed costs per kilometre decline as distance travelled increases.

Even where public transport is operated by the private sector, government regulation may prevent the setting of charges to reflect costs. For example, the New South Wales Department of Transport contracts with private operators for the provision of bus services in certain areas of Sydney. The Department said that it enters into commercial contracts with private bus operators in all urban areas of New South Wales including fringe areas (Sub. 148, p. 2). By legislation, the contract must specify a schedule of maximum fares which the operator cannot exceed. According to the Department, no subsidy is paid to private operators and

consequently there are no special provisions and prices for developing areas (Sub. 70, p. 17).

The allocation of route monopolies in these circumstances may also inhibit the development of service innovations appropriate to the circumferential nature of much travel at the fringe, for example, by small variable route buses of the 'jeepney' kind.

However, the New South Wales Department of Transport said that:

... although the commercial contracts do lay down certain standards in relation to average age of buses used, maximum fares and minimum service levels, bus operators are free to set routes and timetables, determine the type of buses used and to adjust services to meet passenger demand (Sub. 148, p. 3).

Taxis

Taxi fares largely consist of a fixed component (often called a flag fall charge) and a per kilometre component. Fare structures sometimes reflect time of journey (for example, taxis in most cities have a late night tariff and charge for waiting time). As time spent in traffic is also charged, taxi fares to a limited extent reflect congestion.

Regulation governing the taxi industry affects fares in a number of ways. In all States and Territories, there is direct regulation of fare levels. For example, in Sydney, there is a maximum allowable fare (taxi operators are not allowed to charge above a specified level).

Regulations governing entry into the industry such as controls on the allocation of taxi plates also affect fare levels (as well as the quality of service such as waiting time). Such regulations restrict competition, allowing higher fares to be charged. This is reflected in the price of a taxi plate, which has been as high as \$180 000 in Sydney.

High taxi fares resulting from entry restrictions and other regulations discourage use of this relatively flexible form of urban transport and may lead to increased private car ownership and use. Because so much of the travel undertaken at the fringe requires route flexibility, this kind of restriction constitutes a penalty to fringe settlement.

Developer contributions

The role of developer contributions in the funding of public transport and associated infrastructure (for example, bus shelters) is minimal. For example, Burgan and Tisato said that in South Australia the provision of public transport

services to new developments 'is not funded by developer contributions, but rather by fares and subsidies from government'(Sub. 56, p. 18).

However, some providers of public transport services are examining the possibility of exacting developer contributions. For example, Brisbane City Council said:

There are currently no contributions required from developers for public transport (e.g. buses) although the Council normally provides a full urban transit service to housing estates. In some instances developers have offered to provide a new bus and the necessary traffic infrastructure so as to ensure that the development is quickly served by public transport. A 1988 study for the Brisbane Traffic Study stated that a development contribution of \$500 per block would be required to finance a "city express" service to standard housing estates if this source of funding was selected (Sub. 45, p. 21).

It is not uncommon for residents of developments successfully to exert pressure for the provision of public transport some time after development. Because of the uncertainty about public transport provision at the time of development, developer contributions for these contingent costs can be inappropriate.

To overcome this problem, some public transport authorities seek the power to make levies on property owners (perceived to be non-user beneficiaries) to recover costs. (Special beneficiary levies have already been considered in the section on roads.) One suggestion is that the levies be related to the increases in property values occasioned by public transport provision. In its report on *Rail Transport*, the Commission indicated that it favoured the use of such 'value capture' mechanisms for urban rail transport (IC 1991f, vol. 1, p. 216).

How do charges and costs compare?

The periodic access and usage charges set by public transport authorities do not cover costs. Cost recovery rates estimated by the Australian City Transit Association for selected authorities in each capital city for 1989-90 vary from 25.5 per cent in Canberra to 55.3 per cent in Brisbane (Australian City Transit Association 1991).

Deficits incurred by authorities are financed by State governments. For urban rail transport alone, the total operating deficit financed by governments in 1989-90 was estimated by the Commission to be over \$1 billion (IC 1991f, vol. 1, p. 189).

A key issue is whether subsidies are higher for particular areas. There is some evidence that public transport services provided to fringe developments are subsidised to a greater extent than services provided to inner areas.

A New South Wales Treasury study (1992) suggests that cost recovery rates for public transport in Sydney vary with location. It estimated that the cost recovery

rate in 1990-91 of the State Transit Authority (which provides bus and ferry services in Sydney) was generally higher for short journeys (for example, about 75 per cent for distances of up to 7 kilometres) compared with the rate for longer journeys (for example, about 65 per cent for distances between 16 and 45 kilometres). Fare revenues of City Rail (which provides rail services in Sydney) recovered less than 50 per cent of operating costs for journeys of 4 kilometres compared with over 35 per cent of operating costs for journeys of 55.5 kilometres. In addition, fare revenues recovered 47 per cent of operating and maintenance costs in the metropolitan area compared with 16 per cent of these costs in the outer urban area.

The New South Wales Department of Transport said that:

... the [City Rail] fare structure subsidises all rail users, most particularly those who travel greater distances (Sub. 70, p. 12).

The Department added that:

... in 1991/92, cost recovery, including infrastructure renewal costs but excluding a return on assets, was 19.7 per cent for outer urban services compared to 48 percent for the inner urban network. If a return on capital was included, the real subsidy for outer urban areas could be as high as 90 per cent ... It therefore follows that the longer the journey, the greater the incentive for it to be over consumed (Sub. 148, p. 2).

The Department further considered that it is clear that the pricing of urban transport is encouraging fringe development. It said that this would be true irrespective of the relative subsidy of inner and outer areas, because the mere existence of a subsidy would favour those at the fringe who are presumed to travel more (Sub. 148, p. 2).

The Australian Capital Territory Government said:

Route profitability varies between areas, but is not directly related to patronage – some well patronised routes can lose more than lesser used services because of the layout of townships. ACTION's least unprofitable routes are the main inter-town services which return around 42% of operating costs. The most unprofitable are school services which yield only 7-8% of operating costs, and services to new suburbs in greenfields locations (Sub. 63, p. 24).

However, some participants considered that the subsidies work in the opposite direction. For example, Troy noted that bus and tram services typically serve inner areas, but are effectively cross-subsidised from residents in outer areas using public transport to commute to inner areas (Sub. 33, p. 11).

Neutze considered that one cannot conclude that fringe areas are subsidised relative to inner areas simply because long journeys on public transport are subsidised more than short journeys. He said that:

... it is not the subsidy per journey which is relevant but rather the subsidy per resident or household. Since fringe residents use government public transport much less than inner suburban residents (and the subsidies are covered from taxes on all residents) fringe development is discouraged by current policy (Sub. 110, p. 3).

The extent of subsidy to some locations compared with others depends crucially on the factors that cause costs to vary in different areas. The main sources of locational variations in public transport costs are capacity and third party costs.

Excess *capacity* of public transport infrastructure in inner areas may exist, and residents of inner city developments may be able to use it at little additional cost to the provider (for example, rail track). If public transport users were to settle at the fringe, rather than in the inner city, new infrastructure may need to be provided.

Where excess capacity exists in inner areas it is important that charges appropriately reflect that cost relative to the costs of providing new infrastructure. A charge for the infrastructure on those locating at the fringe could be justified, while residents in inner city developments need not be charged. **There is, therefore, a need for appropriate charging mechanisms such as special beneficiary levies for public transport infrastructure which cannot be charged for in other ways.** In this way, appropriate incentives to make use of existing capacity are transmitted. However, while this may be desirable for some services (such as rail), it may not be for other services which do not involve sunk costs to the same extent and from which the same economies from using existing capacity are unlikely to arise (such as buses).

Third party costs such as *pollution* and *congestion* vary with location. It could be argued that greater subsidisation of public transport is warranted in areas where these costs are significant to reduce reliance on motor vehicles. As the Trades and Labour Council of Western Australia said:

... there can be considerable external costs associated with private car use on roads in terms of congestion costs, economic and social costs of accidents and higher environmental degradation, yet it might not be feasible for these externalities to be fully internalised through the setting of appropriate taxes on private car use through direct regulation at the point at which the externality is occurring. Hence, a rationale exists for subsidies to be provided to public transport which generally is more environmentally and congestion sensitive than private motor vehicle forms of transport (Sub. 50, p. 34).

However, on the basis of available information about pollution and congestion problems in Australian cities it is difficult to ascribe effects to particular parts of the city (see appendix F). For example, air pollution is often most acute in the western suburbs of Sydney, although it does not all originate there.

Further, in its report on *Rail Transport*, the Commission argued that increasing subsidies to rail alone is not an effective way of reducing the use of travel by road

(IC 1991f, vol. 1, p. 192). While differential subsidies to public transport—according to the magnitude of the region’s contribution to pollution and congestion – may on the surface be justifiable, direct solutions involving road-based policies are likely to be preferable.

In conclusion, whether a relative subsidy to fringe areas exists cannot be determined from the available evidence. Public transport subsidies per journey favour long distance travel and, hence, travel to and from fringe areas. Public transport subsidies per household predominantly benefit areas in proximity to public transport. Inner city residents are likely to use public transport more than fringe area residents, because more services are provided there.

Taking public transport and roads together, if transport is generally subsidised (apart from the existence of any differential subsidies), this would in itself favour travel and, thus, the dispersal of settlement patterns. Even here a question remains about the extent to which motor vehicle owners are ‘paying their way’ in aggregate, given the magnitude of petrol and other vehicle taxes.

It is apparent that there are a number of areas in which the pricing of roads and public transport can be improved. These issues will be taken up in more detail in the Commission’s current inquiry into urban transport.

4.5 Energy

Two types of energy infrastructure are considered here: electricity and gas supply.

Periodic access and usage charges

Electricity

For charging purposes, electricity authorities generally group users into customer classes (for example, residential, commercial and industrial).

There are a number of different charges which are levied on residential users for access to and use of electricity services. They include a flat charge per kilowatt hour of use, declining block charges (where the price for units of consumption within each block is higher than those in succeeding blocks), time-of-use charges (where the charge varies by time of the day), and a fixed charge which is independent of consumption.

In each State except New South Wales, uniform periodic access and usage charges apply regardless of the distance between generating points and the point

of use and so do not reflect locational variations in costs. For example, the Victorian Government said:

In Victoria, electricity pricing is uniformly applied to all consumers within the customer's class despite where the consumer is actually located. There is currently no discriminatory practice in place as to customer's location, *although it is recognised that the costs of supply are vastly different from location to location* (Sub. 41, Sec. D1, emphasis added).

Gas

Gas users are also divided into classes for charging purposes. Periodic charges for each class usually consist of an access and a variable charge. The variable charge is based on a block structure. With the exception of Melbourne's domestic general tariff, which involves a two-tier increasing block structure, variable charges are based on declining block tariffs, where the price for units in each block is higher than those in succeeding blocks (IC 1991e, vol. 2, p. 170).

Like electricity charges, gas charges apply uniformly within each customer class. Customers who are located at the urban fringe pay the same price for gas as customers located in inner areas. The Victorian Government said that:

From the customer's point of view, there is no difference in charges in terms of where they are located, as long as they are within the [Gas and Fuel Corporation of Victoria's] gas reticulation system. Gas pricing is not a crucial factor to the location decision (Sub. 41, Sec. D2).

In most States, gas tariffs are capped. In this context, AGL Gas Companies said that price capping formulas based on CPI limit the extent to which costs other than field, haulage and the government imposts can be passed to customers through tariffs.

Developer contributions

Electricity

Developer contributions are generally restricted to on-site electricity works and connection to the existing network.

Some authorities levy charges for off-site works such as sub-stations and low voltage overhead power lines. For example, the State Electricity Commission of Western Australia (SECWA) imposes headworks charges on developments that are remote from existing infrastructure (Sub. 49, p. 8). The State Electricity Commission, Victoria (SEC Victoria) may require developer contributions to substations where, due to the layout of the subdivision, less than the minimum number of allotments can be serviced from each substation (SEC Victoria 1989a).

However, in practice, developer contributions are rarely sought for these types of work.

In general, developer contributions are uniform across all locations. For example, the SECWA levies a contribution of \$1000 per residential lot to reticulate underground power within a proposed subdivision development (Sub. 49, p. 8). SEC Victoria charges new residential subdivisions (namely medium density subdivision of 5 or more lots per hectare) a state-wide standard charge of \$884 per lot (Sub. 30, p. 4). A fixed lot charge is not available for low density subdivisions.

Electricity authorities base their developer contributions on the capital costs of supply, although approaches may differ between them as to which of those costs are covered. For example, SEC Victoria estimates developer contributions on the basis of material, stores, transport, and labour costs (including on-costs and corporate overheads). The South East Queensland Electricity Board requires a contribution from developers to provide reticulation to a new subdivision for the cost of the material only. Labour is provided free of charge (Department of Community Services and Health et al 1990).

Gas

In general, developer contributions are not levied for gas infrastructure (including reticulation). This means that the cost of supplying gas infrastructure to new developments is largely met by the gas companies' periodic access and usage charges.

However, in some States, contributions for gas reticulation are sometimes sought. In South Australia and the Australian Capital Territory, developers are required to provide gas trenches. In New South Wales, if the development is not considered economically viable and the developer still wants reticulated gas supply, AGL Gas Companies may request the developer to make a capital contribution to the reticulation costs.

The insignificant role of developer contributions appears to arise because – in contrast with many other infrastructure services – gas supply is not a mandatory requirement imposed on developers in the servicing of land. For example, unlike electricity authorities, gas companies in New South Wales have no mandatory right to supply to new developments. Currently under New South Wales legislation, the developer does not have to provide access to gas supply as a condition of registration of subdivision (Sub. 35, p. 3). AGL Gas Companies said that:

With the trend in new areas to under ground power supply, the electricity distributors have been able to recover reticulation costs from developers ... Gas has no such advantage with developers because of its non-essential nature.

The competitive situation therefore limits the degree to which gas reticulation costs to new estates can in the first instance be recovered from developers and “beneficiaries” (consumers) (Sub. 35, p. 3).

Moreover, because of competition from electricity authorities, developers have some choice as to what type of energy supply they service the land with. For example, AGL Gas Companies said that:

... the developer needs to be persuaded that [gas] is a desirable inclusion on the estate. Some developers simply exclude it altogether from their planning (Sub. 35, p. 3).

Given the existence of legislation to mandate the provision of electricity infrastructure, the lack of similar legislation in the case of gas infrastructure provision could have costly consequences for purchasers of developed land. For example, if developers choose not to provide this service at the time of development, later purchasers may face high costs if they wish to have access to gas supply. This could be unnecessarily costly as gas supply, like hydraulics, is networked and its provision could be coordinated with the provision of other such services. Chapter B6 and part D explores the issue of coordination further.

How do charges and costs compare?

Electricity

In its inquiry into energy, the Commission found that recurrent charging arrangements applying to domestic customers for access to and use of electricity and gas do not reflect the recurrent costs of supply (IC 1991e). Burgan and Tisato said that the Electricity Trust of South Australia:

... currently recovers almost all of its cost (infrastructure and supply) through its two part tariff – a small supply/access charge (a little over \$40 per year) and a single ‘normal’ energy use tariff – on residences and a declining block tariff on small business. For bigger customers, there is a more complicated (negotiated) pricing structure. The end result of this combination of charges is that there is some degree of cross-subsidy from business customers on one hand to residential customers on the other (Sub. 56, p. 15).

Moreover, it is clear from the structure of electricity charges that locational variations in costs are not reflected. The Victorian Government, noted a SEC Victoria (1989b) study on the level of cross-subsidies between customer classes and between regions. According to that study, domestic customers in inner and outlying areas of metropolitan centres were subsidised, but customers in outlying areas were subsidised to a greater extent.

There is also some indication that developer contributions are not recovering all the capital costs of subdivision works in new developments. The SEC Victoria’s developer contributions represent 45 per cent of these costs. However, it is

currently studying options to move towards 100 per cent contributions over three years (Sub. 30, p. 4).

Burgan and Tisato noted that the developer contribution levied by the Electricity Trust of South Australia:

... represents a small proportion of actual cost of servicing the sub-division only, and is implemented to recover holding costs on the capital tied up until the subdivision becomes sufficiently developed (Sub. 56, p. 14).

Gas

The cost of gas infrastructure in new developments is, by and large, recovered through periodic access and usage charges.

Uniform gas charges to domestic customers suggest that any locational variations in costs are not covered. Price capping in some States is another indication that gas charges to domestic customers are not efficiently set overall.

Several participants commented on whether periodic access and usage charges were covering costs to domestic customers. AGL Gas Companies said that, in New South Wales, its tariff levels are probably too low for full cost recovery. Further it said that gas services compete with electricity services in the domestic market, and to the extent that electricity tariffs under-recover costs then gas tariffs are constrained.

Burgan and Tisato said that:

... the current tariff schedule does not provide sufficient funds to provide a sufficient maintenance program (including replacement) and that infrastructure in the ground is deteriorating (Sub. 56, p. 17).

The Victorian Government claims that the Gas and Fuel Corporation of Victoria (GFCV) recovers the cost of new service provision from all users (implying a subsidy from customers in established areas to those in fringe areas) and does not take into account any differences in costs of providing reticulated gas to different areas (Sub. 41). GFCV relies on user charges to service loans for capital investments to supply to new areas. Extension of the reticulation system depends on whether the expected sale revenue generated at the current tariff rates would be enough to cover the capital costs of extension. Because the provision of gas is not an essential service, the reticulation area is not extended unless financially viable under that approach.

There can sometimes be good reasons for periodic access and usage charges not precisely to reflect locational cost differentials. Even in the most competitive industries, loss leaders are used to build up particular purchasing habits, and some firms find commercial advantage in having a single readily understood pricing schedule.

However, the DHHCS said that the locational consequences were still of concern:

The department is concerned at the approach ... where subsidies (apparently flowing to the fringe) appear to be justified on the basis of being 'commercial'. It is difficult to see why being 'commercial' denies its potential impact on efficient settlement (Sub. 155, p.14).

Charging structures which result in consistent low profitability from any particular segment of the market are unlikely to be favoured by commercial suppliers of services. However, the current price structure applying to domestic customers could arise from a range of influences including:

- long-term attempts by commercial firms to buy market share and a stream of future charging revenue;
- price capping restrictions; or
- the dominant influence of the structure of electricity prices.

The draft report asked participants for more information about the scope for incorporating locational variations in costs in differentiated developer contributions or periodic access and usage charges. In response, AGL Gas Companies re-emphasised the difficulties faced by gas distributors in New South Wales of recovering costs from developers, and of recovering fixed costs through direct charging of domestic consumers. These difficulties mainly resulted from the dominance of electricity in the domestic energy market, which inhibited moves towards greater cost reflectivity in pricing. Regulatory constraints such as price capping (mentioned previously) also prevented full cost recovery (Sub. 113, p. 2).

AGL Gas Companies acknowledged that in the absence of these constraints, there would be considerably more locational cost reflectivity in gas pricing, but noted that:

... it seems unlikely that AGL Gas Companies would wish to move to 100% location - specific pricing for domestic customers. There are political and consumer pressures for gas utilities to maintain uniform tariffs for each customer class, at least between adjacent urban areas (Sub. 113, p. 2).

Other participants considered that locational differences in the cost of supplying energy to different parts of an urban area were sufficiently small as not to significantly affect location decisions even if they were included in charges (see for example, Neutze, Sub. 110, p. 3).

In sum, there is very little locational variation in charges for the supply and use of electricity and gas services. But the extent to which costs (and thus subsidies) differ between established areas and the fringe cannot be assessed from available information.

4.6 Social infrastructure

Charging arrangements

Social infrastructure has traditionally been funded out of general revenue raised by taxes at the State level and by rates at the local government level. Charges for the use of social infrastructure are often either non-existent or well below recurrent cost levels. For example, schools provided by State governments are usually free of attendance fees, and child care and community centres are often run on a subsidised basis.

A range of rationales has been given for the continued full or partial subsidisation of social infrastructure and services. The NCPA noted that the funding of many types of social infrastructure out of general revenues:

... recognises the redistributive role of these items, their contribution to other social objectives (eg investing in productive human capital for future generations) and the spatially diffuse nature of external beneficiaries (Sub. 65, p. 9).

First, it is argued that certain social infrastructure and services need to be generally available for the good of society, even though individuals may not choose to pay for them directly. For example, children and the aged, especially, are regarded as being entitled to certain standards of schooling and care. The

DHHCS defined these ‘merit goods’ as:

... where the provision and consumption of the good or service is determined by an authority to be ‘socially desirable’ (Sub. 85, p. 43).

A second reason for subsidising certain social infrastructure and services is based on their alleged ‘public good’ nature: the amount provided does not decline with additional use and it is impossible (or too costly) to exclude non-paying individuals from using the service. It is argued that charging for use, were it feasible, could lead to levels of use that would be less than socially desirable. Services such as policing and fire fighting, may be in this category.

Even where services are not ‘pure’ public goods, it can be argued that there may be sufficient external benefits to justify subsidisation. For example, the “free” provision of education and health services, where charges for use could be implemented, may confer wider benefits to society.

Public authorities are nevertheless beginning to seek contributions from developers towards the costs of social infrastructure, motivated in part by the need to find additional revenue for growing spending requirements. A paper prepared for the NHS found that:

Government revenues are not growing at a rate that is sufficient to support socially oriented programs that are needed to address problems such as unemployment, child poverty, the ageing of the population and the training of new entrants to the labour force and at the same time to provide finance for new public investment ... Revenue constraints directly limit both the volume of investment that can be undertaken out of revenue and the volume of debt that can be supported (NHS 1991a, pp. 5-6).

In some States, the ability of local government to levy developers for social infrastructure is supported by legislation. For example, in New South Wales, section 94 of the *Environmental Planning and Assessment Act 1979* allows local councils to seek contributions for such amenities as children’s centres, community centres, and child care facilities. Similarly in Victoria, contributions from developers can be sought by councils under section 62(2) of the *Planning and Environment Act 1987* towards the cost of providing infrastructure as a condition of issuing a planning permit.

Developer contributions towards social infrastructure are commonly in the form of land. For example, the Department of Planning and Urban Development, Western Australia said developers must provide land to the State Government for primary school sites, and to the local government for public open space. Land provided to the relevant local government for community facilities such as meeting halls, libraries, kindergartens, preschools and day centres may be accepted as meeting public open space requirements. Cash instead of land for open space may also be accepted (Sub. 49, p. 10).

However, developer contributions still play a minor role in the financing of most social infrastructure, particularly that provided by State governments. The Australian Local Government Association provided information that shows that developer contributions as a percentage of average annual net payments (recurrent and capital outlays net of reimbursements from State governments) on social infrastructure provided by local government are low in each State and the Northern Territory (Sub. 61, pp. 5-6).

Do subsidies differ among locations?

Studies of the costs and charges associated with the provision and use of infrastructure to fringe development often find substantial under-recovery and conclude that fringe development is subsidised to that extent. The reason for this conclusion is partly that social infrastructure – which is often not charged for – is required to be provided, and included in the calculations of infrastructure costs.

However, this may have little bearing on settlement patterns if subsidies are similar everywhere. For example, if charges for certain social infrastructure and services were negligible, but costs per eligible user were uniform throughout the city, the existence of a deficit at the fringe would not indicate a *relative* subsidy to location there.

A central issue, therefore, is the extent to which the costs of providing social infrastructure differ between locations. Locational differences in costs are often less significant for social than for economic infrastructure:

- social infrastructure does not usually require physical networks, diminishing the extent to which costs vary according to the amount of pre-existing infrastructure in neighbouring areas.;
- social infrastructure can often be located to minimise building costs in areas in which terrain varies;
- environmental impacts, to the extent that they occur, are likely to be similar wherever the social infrastructure is located;
- capital costs are a smaller proportion of total costs for social than for economic infrastructure. Since recurrent costs associated with the use of social infrastructure (predominantly salaries) tend to be similar in different areas, this has an impact in reducing cost disparities.

This is not to say that location differences in the costs of social infrastructure can be entirely ignored. Inner urban sites are often more expensive than others and could command a higher rent. This apart, there is unlikely to be any systematic difference between inner areas and fringe.

Not all of the unrecouped cost of providing new social infrastructure represents a relative or differential subsidy, in fringe developments or elsewhere. While development in new areas creates demands for new infrastructure, it also relieves demand that might otherwise be placed on existing infrastructure (or congestion of facilities). Provision of infrastructure may also postpone the need for augmentation elsewhere, or may generate spare capacity which could be sold or otherwise used.

Social infrastructure often occupies valuable inner city land. It is often argued that if the infrastructure is not fully utilised, the proceeds from selling the land could meet the costs of re-establishment elsewhere. If governments are unwilling to close down uneconomic facilities (schools, hospitals, child care centres) in inner areas, despite declines in demand, then this is in effect a subsidy to residents of those areas.

For example, the New South Wales Department of School Education said that:

There is a net cost to the State because the move towards the fringe of younger families leaves older schools under utilised but the communities which continue to use these older schools defend them with some passion (Sub. 150, NSW Department of School Education, p. 1).

A question arises as to what is an ‘uneconomic’ facility. When there are no user charges, this cannot readily be answered other than by reference to the social objective which underlies the provision of the services involved.

The Australian Capital Territory Government also noted the impact that improved design of facilities may have in ameliorating this problem in the future:

The issue of designing multi-purpose facilities which are easy to redevelop or devote to an alternative purpose than the original needs to also be considered. Multi-purpose facilities have many benefits from a community viewpoint and have cost saving and revenue generation potential for government (Sub. 63, p. 40).

In order to assist the appropriate rationalisation of capacity, it is important that developer contributions do not lead to retaining the asset after the need for it has passed. This can potentially occur in New South Wales where, because of the laws relating to trust, local councils may not be permitted to make alternative uses of infrastructure funded by section 94 contributions.

Where the continued operation of an existing facility is accepted as a policy constraint, it may be less expensive to encourage use by new residents than to open a new one plus keep the old one operational. For example, the Australian Capital Territory Government noted in relation to a proposal to develop north Watson (in inner north Canberra):

... in this financial year we have got a primary school on the books which is a capital cost of \$7.2 million. That excludes the land cost and excludes the oval next door for the kids to use to play on which is also a neighbourhood oval but that's \$7.2 million cash that has to be outlaid to build a new school. Therefore if we can keep the population levels of the existing primary schools at their level - their capacity - then clearly we are saving maybe one school ... , saving the construction costs of that new school (DR transcript, p. 460).

These savings only occur, however, if there is a genuine excess of capacity. For example, in the case of the school servicing a possible development in north Watson it appears that some space is currently being rented to various users for purposes other than teaching (Watson Community Association, Sub. 132, appendix 2, p. 8). To the extent that these users will need to be provided for elsewhere, the 'cost' of existing arrangements will be overstated.

Some forms of financing are better than others

Several participants had views about the degree to which social infrastructure should be subsidised and, conversely, the degree to which it should be subject to user charges. For example, the NCPA proposed a categorisation (see box 1) which places social infrastructure items along a continuum from full subsidisation to full 'user pays'.

However, the NCPA said that such categorisation is:

... 'heavily value laden' typology and should be subject to explicit political decisions. As with any continuum, the boundaries between particular categories of infrastructure eventually become a matter for arbitrary determination (Sub. 65, p. 8).

The South Australian Government considered that the most appropriate method of funding should turn on whether the service is vital for general community welfare, including for equality of access irrespective of income, residential location or costs. It said:

[Social infrastructure services] meet basic needs as well as conferring benefits to the wider community or society as a whole (eg. schools). In these cases, funding to at least a basic minimum level through general taxation is the most appropriate method. Additional funds paid by individuals to obtain a service at a "higher" level should also be possible ... In the case of other services, the distribution of benefits may be weighted more heavily to the individual rather than the community as a whole (eg. child care, recreation centres etc.). In these cases, a greater proportion of the cost could be borne by the individual user rather than the community generally (Sub. 161, p. 11).

Box 1: Which social infrastructure should be subsidised?

The NCPA said that:

In practice, there are few examples of infrastructure items which warrant full subsidisation. But it is possible to conceive of a continuum of infrastructure types which ranges from a high level of intended public subsidy to items which should be funded on a purely (direct) user pays basis (Sub. 131, p. 4).

An example of such a continuum for social infrastructure was given as follows:

<i>Degree of subsidisation</i>		<i>Item of social infrastructure</i>	<i>Item of economic infrastructure</i>
High warranted user subsidy component	*	primary and secondary schools, user subsidy component, metropolitan open space, emergency services, community services.	
	*	community health care, pre-schools, neighbourhood centres, library services, hospitals.	
	*	district open space, child care centres, universities and TAFE.	
	*	sporting, recreational and cultural facilities.	
	*		arterial roads.
	*	local parks.	
	*		estate roads, estate hydraulic, estate drainage.
	*		site energy connections, telecommunications.
High 'user pays' component	*		connections to sub-arterial roads, connections to trunk hydraulics and energy.
	*		trunk hydraulics, sub-arterial roads, trunk energy, water harvesting.

Source: Sub. 131, pp. 6-7.

In responding to the draft report, a number of participants called on the Commission to specify how particular items of social infrastructure should be financed. However, many of these questions are so broad-ranging as to be well beyond the bounds of this inquiry. It would be inappropriate, for example, for the Commission to recommend in this inquiry on such matters as whether education and health care should be wholly or partly subsidised or provided on an entirely user pays basis.

However, within the broadly stated policies of governments, there are a number of financing choices to be made which can influence the extent to which the costs of provision to different locations are transmitted.

General revenue sources

A number of participants have argued that it is appropriate that the costs of some types of social infrastructure be funded from general revenue (State taxes, local council rates). For example, the HIA said:

Social infrastructure (such as education, child care and hospital facilities) should be funded primarily through community-wide taxes and charges, reflecting the facts both that the bulk of the benefits flow to the community as a whole rather than to individual users and that the provision of social facilities often have substantial redistributive purposes attached to them (Sub. 52, p. 32).

The NCPA considered that:

To the extent that an item of infrastructure is explicitly assigned a social or redistributive function after due consideration of the alternative means of delivering these benefits (including direct income transfers), its funding should be consistent with the broad taxation principles adopted by Government. ... it would be inappropriate to use, say, developer contributions to help fund the 'social' component (for example, a school). To do so would be to unfairly burden the land development industry with a social obligation. In short, it is inappropriate to devise user pays strategies (such as developer contributions) for those components of infrastructure items which Government has decided shall be provided as a right to all or particular groups (Sub. 131, p. 5).

If costs differ by location, however, financing from revenues raised from State taxes can not communicate such differences and thereby influence location decisions. As already noted, this is less the case for social infrastructure than for economic infrastructure. However, it would be possible for the costs of local government provided infrastructure to vary between councils. The quality of municipal services (for example, the number and attractiveness of parks within a local council's jurisdiction) are more likely to be different. In this situation, financing from rates may have some influence on location decisions.

Developer contributions

With developer contributions, finance for some social infrastructure can be raised from the groups in society most likely to use it. For example, the demands for capital expenditure on new child care facilities are likely to be concentrated in areas of new settlement. Hence, the use of developer contributions (to the extent that they are passed forward to the purchasers of developed land) ensures that people purchasing land to settle in the area bear the cost of this expenditure.

In addition, through developer contributions, residents may indirectly choose the level of social infrastructure appropriate to their needs (and, where to live), by paying for it through the purchase of a house.

As the Australian Capital Territory Government said in respect of social infrastructure:

Under current practice [in the Australian Capital Territory], capital costs are funded at least in part by developer contributions, which are invariably incorporated in the sale price of developed land, so that ... it is those who benefit from proximity to social infrastructure who pay (Sub. 136, p. 8).

Developer contributions have also been proposed as a way of capturing increases in land values brought about because of the subsidisation of social infrastructure and services. The NCPA noted how the capitalisation of subsidised social infrastructure could occur:

... to the extent that these items of infrastructure have a value for significant sub-groups amongst home buyers (ie some buyers would be willing to pay for access to these services), their provision “free of charges” will be capitalised into the price of catchment properties with the strength of this effect depending upon proximity to the facilities in question and the profile of home buyers in the area (Sub. 65, p. 9).

Hence, in one sense developer contributions can operate as a betterment charge. Neutze said:

... if the provision of social infrastructure results in an increase in property values, and at least part of that increase can be recovered by requiring developers to pay for the infrastructure, it seems appropriate to do so (Sub. 110, p. 3).

However, developer charging is a blunt instrument for allocating social infrastructure costs to users. Residential areas in Australia tend to be heterogeneous (as chapter A2 has shown), and many households locating in a given area will need to make compromises in relation to their own preferred mix of services. Some households purchasing at the fringe will never need schools, for example, despite the fact that charges for schools may be reflected in the price of their land. The NCPA said:

... if the focus of the development contributions is the value of social infrastructure as capitalised into house and land prices, the contribution will, by definition, be linked to facilities for which a clear nexus with the housing in question will be difficult to demonstrate (Sub. 65, p. 18).

New residents usually impose a demand on some form or other of social infrastructure wherever they settle, despite some appearances to the contrary. For example, inner city residents need schools and health centres, and so some must be provided for them, or (in a situation of overall declining demand) some surplus capacity funded. If developer contributions for social infrastructure are not required for services provided to these inner area residents, charging those

locating at the fringe would constitute a distortion to settlement patterns. Where required, developer contributions for social infrastructure should be applied in the areas that generate the related costs. They should not be confined to fringe developments.

In New South Wales, some steps towards parity in practices for charging developers have been taken. Local councils are empowered to levy contributions towards the recoupment of the costs of services and amenities already provided in anticipation of new developments, from which a proposed development will benefit (New South Wales Department of Planning 1992, p. 12).

If developer contributions are charged for social infrastructure, they will generally be capitalised in land values. If that happens, they may counteract original welfare objectives. In any event, they should be recognised in calculating the extent of any subsidy for the service.

Periodic access and usage charges

Charges for use would target costs more closely to those benefiting from the provision of social infrastructure and services than developer charges. Delfin said:

Where the user pays principle is adopted, it must be applied consistently across all areas and all users if there is to be an efficient matching of pricing with utilisation (Sub. 59, p. 2).

User charges can give people more flexibility in their location decisions. They may vary consumption of social infrastructure by travelling rather than relocating to an area with a different level of service provision and property values. They can also be used as a means of regulating use of capacity and rationing scarce capacity to those who value it the most.

Again, however, as the NCPA said:

While it is certainly possible to use “at the gate” charges for more local social infrastructure like schools, district parks, neighbourhood houses and so on, many would see this as defeating the very social and redistributive purposes involved in the supply of such facilities (Sub. 65, p. 16).

Similarly, Brisbane City Council said:

By and large, social infrastructure is provided for social justice reasons and user charge mechanisms for rationing use of such infrastructure for that reason may not be appropriate in all circumstances (Sub. 117, p. 6).

The New South Wales Department of Community Services said that:

User charges may be appropriate for some social and recreational services. However, many social and recreational services play a major role in the functioning of families and communities ... Other community services would not be appropriately funded by user charges. An example of this would be a child protection service where a significant element in the treatment is the will of the parent to participate. User charges would quite possibly eradicate any willingness the parent might have in co-operating with the service (Sub. 150, NSW Department of Community Services, p. 2).

Conclusions

Where social infrastructure is provided to achieve social objectives of subsidised consumption among sections of the population – or where such services generate significant spillover effects – it would seem preferable to finance them through a general revenue source that does not confine costs to residents in new developments, wherever they are located.

The Commission does not regard the absence of charging for social infrastructure in itself as an indication of location bias towards urban sprawl.

Failure to recoup costs through charging for social infrastructure is often apparent throughout the city. It does not necessarily encourage fringe development, unless costs of provision are systematically higher there than in inner areas. This seems unlikely for most community amenities, except where there are any direct cost differences – which are unlikely to be systematic or very significant – or there is significant excess capacity in inner areas. Excess capacity is often more attributable, however, to impediments to adjustment than to the existence of genuine ‘free’ resources.

Charging is likely to be most practicable where usage of the services is concentrated locally and where charging does not defeat wider social objectives. Examples may include local parks, municipal libraries and child-minding facilities. Where practical to implement, a charging regime would signal the desirability of provision of such social infrastructure and its timing. It would also assist the relocation or abandonment of facilities when they are no longer operating efficiently. **In these cases it would seem preferable, however, to charge those who use the facilities rather than imposing developer contributions.**

Participants' response to the Commission's approach

The Commission's approach to assessing whether the provision of social infrastructure to particular locations was relatively subsidised or not was supported in the draft report hearings by several participants including the UDIA and Leigh-Murray and Tait.

However, Brisbane City Council said:

Not regarding the cost of provision of social infrastructure to the urban fringe as a subsidy cannot be supported. There is existing social infrastructure in the inner city, some of which is under-utilised and some of which has a metropolitan-wide catchment. There are short falls in the provision of social infrastructure at the urban fringe because of fiscal restraints. Encouraging the development of additional dwellings in established urban areas would provide more households with the advantages of close proximity to existing social infrastructure, reduce the mismatch of social infrastructure and clients where the infrastructure has a metropolitan-wide catchment, would reduce the burden on the public sector of providing new infrastructure at the urban fringe, and would minimise the disadvantage which is currently created through under-servicing of new development at the urban fringe with appropriate social infrastructure (Sub. 117, p. 6).

The Commission acknowledges that, from the point of view of public authorities providing social infrastructure, a subsidy represents an outlay which could be reduced if more efficient use were made of the infrastructure. Hence, in making decisions relating to the provision of new social infrastructure, it is appropriate for providers to consider low cost alternatives.

However, some of the problems referred to – such as those arising from inefficient use of existing infrastructure and constraints in the provision of new infrastructure – would often be better addressed directly by the relevant authorities themselves rather than being approached through manipulation of the pattern of development. This issue is discussed further in chapter B6.

4.7 Summing up

The providers of infrastructure considered in this chapter are mostly public authorities, many of which have been moving towards more commercial practices. There have been marked reforms of charging structures among many suppliers of hydraulic services, for example, and energy utilities are also moving in that direction.

This chapter has shown that the extent to which charges for infrastructure reflect the costs of different locations varies considerably according to the particular service providers concerned. In some cases, this may be because of technical limitations on the ability of the authorities to charge. Sometimes it may also reflect normal practical pricing considerations: where locational variations are

small, unnecessary burdens are imposed on authorities as well as on consumers by pricing schedules that are too complex. But in many cases it may reflect a lack of incentive to get prices right or, indeed, be a consequence of government-imposed requirements to price in particular ways.

Looking at infrastructure item by item, there appears to be significant scope for prices to match costs more closely.

For *hydraulic services*, practices differ quite markedly among cities. In the two largest cities, total charges imposed on a new block of developed land are, on average, within a reasonable margin of the total costs incurred in servicing that land with hydraulic infrastructure. There is much scope, however, for charges to be more closely tailored. For example, developer contributions for the provision of water infrastructure to fringe developments are often uniform. Perhaps more significantly, uniform developer contributions frequently also apply to inner city developments. The costs of extending services may be quite small and when the reason for this is the existence of excess capacity, it makes sense to charge lower prices – especially where demand is price sensitive.

Melbourne Water is moving away from the practice of uniform developer contributions and the SWB has already done so. The Commission sees benefit in extending the practice of differentiated charges, especially where there is genuine excess capacity.

Many hydraulic authorities still rely on rates based on property values to raise revenues. However, property values and the corresponding rate payments are usually quite unrelated to the costs of servicing properties with infrastructure. Rating is also incompatible with variable access charges based on cost differences. **The Commission reaffirms that periodic water access and usage charges based on property values should be phased out.**

Road charging is reliably matched to capital costs only within subdivisions. Beyond this, costs caused by developments that are associated with higher level roads – such as congestion and the need for augmentation of capacity – are inadequately charged for, if at all. The Commission would like to see transparent mechanisms introduced for the levying by road authorities of developer contributions for costs of higher level roads attributable to specific developments. Better charging mechanisms for congestion, such as greater use of electronic tolls, would also help. In that way congestion and its control can become a factor in location decisions.

Box 2: Is there subsidised sprawl?

It is commonly considered that the outward expansion, at relatively low density, of Australia's cities, is attributable in part to substantial subsidies delivered via under-charging for publicly provided urban infrastructure. In testing this hypothesis about subsidised sprawl:

- all relevant costs and charges should be accounted for, including not only 'upfront' outlays and payments, but also those occurring over time;
- any external effects should also be considered, including environmental impacts;
- and where under-recovery of costs occurs throughout the city, only the differential subsidy to households at the fringe can be regarded as providing an incentive to location there over established areas.

In practice, data limitations preclude the sort of detailed empirical analysis that would provide a conclusive answer to this question. But the following considerations suggest that, for some important categories of infrastructure, the existence of large subsidies to fringe location is not apparent.

Hydraulics

- A detailed study of total costs (capital and recurrent) and charges (upfront and overtime) was possible for Sydney and Melbourne.
- More cases of under- than over-recovery of costs were estimated, although they were not confined to the urban fringe.
- Some differential subsidy to fringe location relative to inner areas was identified for Melbourne, but this appears to be changing.
- *Given margins for error, the estimated shortfalls in cost recovery are not large enough to conclude that there is a significant inducement to fringe location.*

Roads

- Within subdivisions, capital costs are generally covered (through developer contributions); the picture is not clear for recurrent costs.
- There is under-recovery of attributable costs of roads outside subdivisions. This is likely to favour fringe areas because more new road building is necessary and more people at the fringe are likely to use motor vehicles. (However, under-recovery may favour inner areas where new road building is necessary and if it is relatively more expensive to build compared with at the fringe.)
- The impact of development location on *congestion* costs will depend on: the extent of motor vehicle use by inner and fringe residents (greater at the fringe); the location of congested areas (mainly inner, but can also occur at the fringe); travel patterns (inner residents are more likely to travel in areas generating congestion, but fringe commuters making radial journeys can also contribute).
- The impact of development location on *pollution* costs will depend on: the extent of motor vehicle use by inner and fringe residents (greater at the fringe); location of pollution generating areas (mainly inner); travel patterns (inner residents are more likely to travel in areas generating pollution, but fringe commuters making radial journeys can also contribute).
- *Whether there is a differential subsidy to the fringe is unclear and will depend on the circumstances in each city.*

Public transport

- Subsidies per journey favour long distance travel, which is likely to favour fringe location.
- But subsidies per household may favour those who live in inner areas, who are likely to use the services more, because more is provided there.
- *On balance, a relative subsidy to the fringe cannot be deduced.*

Transport in general

- The overall subsidisation of public transport would favour travel as an activity, and hence dispersal of households and jobs.
- It is not clear that motor vehicle travel is subsidised in aggregate when account is taken of motor vehicle registration and licence fees and fuel tax payments.
- *On balance, probable overall subsidy to dispersal.*

Energy

- Very little locational variation in charges for electricity and gas.
- Some indication of variation in costs (and cost recovery) within cities, but little information comparing the fringe to established areas.
- *Relative subsidisation of the fringe cannot be assessed from available evidence.*

Social infrastructure

- Generally subsidised throughout the city.
- Construction and running costs vary little by location.
- There may be a relative subsidy to the areas where new capacity is provided to the extent that genuine excess capacity is readily available elsewhere. But much of what is claimed to be excess capacity has alternative uses.
- *Most claims about subsidisation of the fringe greatly overstate the relative incentive to locate there.*

The provision of *public transport* services such as buses, rail, trams, and ferries is commonly subsidised in all locations. While the rate of subsidy is typically higher for longer journeys, which should favour residents of outer suburbs, the incidence of subsidies across a city also depends on households' use of public transport, which is generally higher in the (better provided for) inner areas.

Charges for *energy services* in urban areas do not appear to account for differing locational costs of provision. Given the regulations favouring electricity over gas, it may be that uniform pricing by the former has constrained the latter's approach. Price capping requirements may also be a contributory factor in the case of gas.

The larger estimates of aggregate charging shortfalls at the urban fringe that have been given currency, have depended crucially on the cost of *social infrastructure*. However, the lack of cost recovery for social infrastructure is a social goal which is pursued throughout the city. The key question is not whether new social infrastructure at the fringe is subsidised, but rather whether the degree of subsidy required is larger than in other areas. Settlement in new areas could be more

costly if there is genuine excess capacity in established areas. However, when surplus facilities can be partly or wholly closed or put to other uses, there must be some doubts about the extent of such excess capacity in practice.

The conventional view of costing and charging for infrastructure is that fringe settlement is substantially subsidised. Even without the detailed data needed to estimate the extent of subsidisation overall, this chapter has shown that the true situation is more complex (box 2 provides a summary). The conventional view is often based on only part of the evidence. Many studies do not take into account those costs and charges that occur over time, limiting themselves to upfront outlays and payments. As well, third party costs such as pollution and congestion need to be incorporated. But these are difficult to attribute to settlement in particular areas because of uncertainties about transport use and travel patterns. Finally, and importantly, where there are subsidies to households, they often occur in established areas as well as at the urban fringe, so that differential incentives to locate in one area over another will be smaller than the gross subsidies imply.

B5 IMPACTS OF CHARGING REFORMS

In principle, the type of infrastructure charging instrument used should not in itself affect location decisions, but in practice it may do so because of (implicit) government guarantees and mechanical lending rules used by banks.

Under an illustrative simulation of the effects of an increase in infrastructure charges on fringe development, changes in land use and population density occur throughout the city and the pace of residential development at the fringe reduces, despite a strong community preference for houses rather than flats.

There are also impacts on household net income from changes in the structure and level of infrastructure charges. However, the mix of people affected in each area is such that higher charges would not be concentrated on any particular group in the community. Subsidies from general revenue sources are more effective in achieving equity objectives than providing subsidised urban infrastructure.

5.1 The locational impacts of different charging instruments

The incidence of charges

Although levied on developers and initially paid by them, developer contributions are most likely to be either passed forward in the form of higher prices of developed land or passed back in the form of lower prices for undeveloped land. Vipond has observed:

... it is as unlikely that developers pay levies as that sales taxes come out of shopkeepers' profits (Vipond 1990, p. 8).

A key factor in determining whether developer contributions are passed forward or backward is the supply and demand regime prevailing in the market for developed and undeveloped land.

At the initial public hearings, Day argued that such contributions are passed back to the landowner unless there is 'a monopoly situation'. He said that this actually occurred when the New South Wales Government instituted betterment levy legislation from 1970 to 1973. Day claimed that the legislation coincided with a shortage of serviced land that allowed developers to pass the contribution forward.

On the other hand, the UDIA in commenting about the effect of competition on housing affordability stated:

... one thing that must be understood is that the land development industry is broken into a number of different players and the land owners, the raw land owners are not necessarily developers ... most of them have other uses for the land and will only bring that land to a developer to turn into lots at a time when the value of that land as raw land in a development exceeds its other uses ... this is one of the reasons that almost inevitably these extra charges are passed forward. It's very difficult to pass them back (transcript, p. 512).

If the supply of undeveloped land in fringe areas is relatively unrestricted, its selling price will be governed by its value in its next best – for example, rural – use (plus the transactions costs). In this case, very little of developer contributions will be passed back although there may be some temporary fall in prices before rural values are re-established. On the other hand, if zoning or other factors lead to premiums due to supply restrictions, then there is a possibility of a monopoly element in the price of undeveloped land which is captured by the owners of the land.⁶

Indeed, demand conditions will play an important part in determining incidence in this situation. For example, if consumers regard other forms of expenditure as close substitutes for land purchase, it is more likely that charges will be passed back. Cox (1991) notes that property tax theory suggests that where home buyers are sensitive to price changes and developers are operating in a competitive environment, developers will bid less for land. However, if consumers are strongly attached to land purchase and continue to exhibit strong demand despite price increases, it is likely that they will absorb price increases due to developer contributions.

Research in the United States (see table 1) suggests that the ultimate burden of exactions has in the past fallen on the final consumer. This was found to be the case in 'desirable' areas where buyers were largely insensitive to prices and in areas where buyers were price sensitive but where there were no barriers to developer entry. However, these studies were undertaken in high growth areas and during inflationary periods (Cox 1991). Cox believes that more work is required to argue this convincingly.

Another United States study (Bauman et al 1987) showed that developer contributions are generally passed forward to consumers rather than back to landowners.

⁶ It has also been argued by Neutze (1974) that incidence depends on the relationship between developer contributions and land use control decisions (pp. 91-92).

Table 1: Payment of residential development impact fees

<i>Supply and demand condition</i>	<i>Result</i>
Buyers are insensitive to price changes and there are no barriers to entry by developers (for example, smaller, isolated, desirable urban areas like Colorado Springs)	Developers can mark up housing costs by nearly the full cost of the fee plus a factor equivalent to the cost of administering the fee. <i>Buyers pay the largest share of the fee.</i>
Buyers are insensitive to price changes but there are barriers to developer entry (for example, highly desirable places within larger metropolitan areas like San Jose, California)	Developers will change their market orientation to higher income households. Lower and middle income households will be squeezed out of the community and into nearby communities that are close substitutes. <i>Buyers pay the largest share of the fee.</i>
Buyers are sensitive to price changes and there are no barriers to developer entry (the most common situation)	In the short term, both buyers and developers share the burden. Unless developers offset their share of the fee by reducing lot or dwelling unit size, quality and amenities, or by reducing the cost of land purchase, their share of the fee burden will come out of profit. Assuming capital is relatively mobile, developers will exit the market after they have sold their pre-fee inventory. They will re-enter the market when demand raises prices to a level that restores profits to pre-fee levels. <i>Thus, in the long term, buyers will pay the largest share of the fee, unless landowners reduce their price.</i>

Source: Huffman et al 1988, p. 51.

Yet another study looked at the impact of developer contributions in a region where there were a number of cities offering developed land (Delaney and Smith 1989a). Comparison of four cities in Pinellas County, Florida (covering Dunedin, a city with impact or developer fees, and the rest without) indicated that developers were able to pass on the full extent of the fee. However, the price differential due to the impact fees in Dunedin compared with the price of new dwellings in the other three cities disappeared after about six years. Thus, in the short run developers passed forward the cost impact before the housing market could adjust. Neutze considered:

In any event, the result may have been different if all cities had imposed the requirements at the same time, which commonly occurred in Australia (Sub. 110, p.3).

In the draft report, the Commission concluded that in most cases developer contributions would be most likely to be passed forward to purchasers of developed land in most cases. A number of participants supported this finding. The New South Wales Department of Housing said that this:

... is consistent with the Department's view that in the case of Sydney there appears to be little scope to pass charges back to original land holders (Sub. 150, p. 3).

The South Australian Government said:

It is agreed that in the short to medium term at least, it is likely that developer charges will be passed forward rather than backwards. This is due to the lag between original purchase of broadacre land and its eventual development as much as anything else (Sub. 161, p. 12)

However, some participants considered that it was difficult to be conclusive about the incidence of charges. The NCPA said:

The ultimate incidence of contributions between the land seller, the developer and the end user remains controversial. Moreover, the means by which developers might pass forward contribution costs is unclear; greater use of internal cross-subsidies in large estates, or where developers are operating on multiple development fronts around a metropolitan area, may occur as the industry moves towards fewer and larger participants (Sub. 131, p.12).

The Queensland Government noted that:

... the ultimate incidence of developer contributions as between the end buyer, the developer and the raw land seller remains controversial and, as such, the signalling power of this pricing mechanism is unclear (Sub. 153, p.2).

However, it noted:

While in the long term purchasers of developed land generally do bear the costs of charges, the possibility exists to reduce this cost if forward planning and charges are known. In this situation, the developer can negotiate a price, based on known development costs and reduce some of the speculative element which ultimately is passed on to the long term purchaser (Sub. 153, p. 6).

Neutze said:

In general it is difficult to be sure how much of the increase in prices following the introduction of developer requirements is due to costs being passed forward and how much of it is due to the increased attractiveness of the developed sites because services are provided earlier and more fully than when they were provided by government (Sub. 110, p. 3).

In most cases, a 'developer requirement' such as related to the provision of on-site infrastructure would contribute to the attractiveness of developed sites. Otherwise, it would amount to a mere tax on development.

The DHHCS considered that the extent of passing forward could be affected by any premium in the value of fringe land arising from access and potential access to subsidised infrastructure. It said:

The purchase price paid by developers is, in general, in excess of the opportunity cost of alternate, generally agricultural use, in part representing a presumptive inclusion of the amenity value added by under-recovery of infrastructure expenditure. The issue is not simply that of developers' margins, but rather the extent to which prices for new urban land rise above its "opportunity cost" value (Sub. 155, p. 15).

The extent to which a premium can be attributable to under-charging for specific items of infrastructure (as distinct from being attributable to externalities associated with proximity) will depend partly on the land development process. The more that subsidies for specific infrastructure stimulate development, the less tendency there is for the amount of under-recovery to be capitalised in developed lot prices. If cheap infrastructure is widely available, it should be possible to acquire land with the services provided for no more than the charges actually levied.

However, restrictions on development (such as zoning restrictions or restrictions instituted by providers themselves) can prevent the subsidised infrastructure being universally available to developers. In that case a land value premium could be generated which accrues to developers as owners of raw land. When developer contributions are introduced, this premium could be wholly or partly eliminated. Hence, it is feasible that restrictions could limit the extent to which developer contributions are passed forward to consumers.

On the whole the views of participants broadly confirm the judgment made in the draft report that **while the incidence of developer charges and other contributions at any particular time will depend on the characteristics of the market, it is most likely in the longer term that they will fall on purchasers of developed land.**

In principle, the incidence question is not restricted to charges on developers. Any charges (such as periodic access charges) levied in the chain between the supplier of undeveloped land and the final purchaser could be passed backward or forward with the same incidence as developer charges.

For this reason, incidence effects are probably not a good reason for differentiating among charging mechanisms. Incidence will depend more on the characteristics of the markets for undeveloped and developed land than on the type of charge imposed.

The burden of financing

The way in which charges are levied will usually determine who has to provide the capital for the initial investment in infrastructure. If public infrastructure authorities recover costs through access charges over time, it is they who must borrow or otherwise provide the finance necessary for the physical capital involved. The use of developer contributions, however, can have the effect of ultimately transferring the borrowing task for the initial investment from the public authority to the purchaser of developed land. Yates said:

Increased use of up-front charges is equivalent to increased reliance on equity finance by the service supplier and it is the end user who may need to resort to borrowing in order to gain access to the services provided (Sub. 3, p. 2).

Thus, the use of developer contributions means that purchasers of developed land must generally add to their mortgages and repay the financing cost of the infrastructure personally to their banks.

Walsh considered that home purchasers often have least capacity to sustain the extra deposit and repayment burdens that would arise from an increasing reliance on developer contributions (Sub. 56, p. 15). Moreover, the DHHCS said:

Consumers are more likely to have their land use decisions affected by the incorporation of full infrastructure costs into their initial land prices than a longer term liability for a higher service charge (Sub. 85, p. 56).

One reason that developer contributions might be more onerous is if banks were less willing to lend to purchasers because the initial amount sought was higher. Banks could, in principle, agree to a larger loan because the expected reduction in future recurrent charges by public authorities providing infrastructure would imply a greater ability to repay the loan by the borrower. However, that may not be the case if there was great uncertainty about future charges or if banks were incapable of taking account of a purchaser's increased repayment ability because of inflexible rules about lending.

In the past, banks have tended to use fairly mechanical rules to determine repayment ability and, hence, ration capital. A lending rule based on gross incomes was often used. The Commission's report on the *Availability of Capital* discussed the use of such rules (IC 1991b). While they were common before deregulation, the lifting of restrictions that occurred in the 1980s has made them less so. (Although the existence of economies in administration dictates that they will retain a place in lending policy.)

The shifting of financing away from public authorities providing infrastructure can, however, have an impact on the cost to purchasers of developed land and, hence, on city shape, if interest rates differ for each category of borrower. This is generally the case because government borrowings are perceived to be

guaranteed and public authorities are able to borrow at a lower rate of interest than private sector providers of urban services, and individuals.

The actual or implicit government guarantee is accepted because of government access to taxing powers which ultimately allow it to meet any reasonable obligations incurred. The interest rate to public authorities does not relate to the underlying risk of the loan, or to its purpose. Infrastructure financed through actual or implicit government-guaranteed borrowing, therefore, has the potential to be undertaken at a lower cost than other activities of equal risk and possibly greater social benefit undertaken by the private sector.

In principle, the timing of charges should make little difference to the burden of infrastructure finance. In practice, mechanical lending rules used by banks, the uncertainty created by the potential for public authorities to alter future charges, and actual or implicit government guarantees on the borrowings of public authorities may create extra burdens for purchasers of developed land.

5.2 The locational impacts of changing the level of charges

The discussion in chapter B4 points to the need to reform charging policies for infrastructure to reconcile various divergences between costs and charges. That discussion suggests that reform is likely to be directed towards increasing charges for some forms of infrastructure.

The impacts arising from changing the level of charges on fringe developments relative to other locations depend on a complex interaction between the demand for and supply of housing and land in fringe and established areas.

Changes in charges on fringe developments would alter the relative cost to developers of various development options. Developers could respond to these higher costs on the fringe in several ways:

- they could pass them on to purchasers of developed land;
- they could pass them back to owners of undeveloped land;
- they could produce higher density developments; or
- they could switch from developing fringe land towards redeveloping land in established areas.

For households, changes in charges on fringe development would alter the relative cost of living in particular locations. With an increase in charges on fringe developments being reflected in selling prices, households could respond in the following ways:

- their demand for newly developed land could fall;
- their demand for serviced housing and land in established areas could increase.

As discussed earlier, it appears likely that increases in developer contributions would, in most cases, be passed forward to purchasers of developed fringe land in the long term. With any increase in charges being reflected in the price of developed fringe land, adjacent land in established areas would become relatively more attractive to households (to buy) and to developers (to develop) and their prices would rise as well. This would cause further ‘knock-on’ effects and, eventually, the land price structure throughout the city would be elevated. In this situation, increases in land prices could make for more intensive use of land on average throughout the city.

The New South Wales Department of Housing noted a report by Glazebrook and Associates (1992) and said:

In the report ... Glazebrook considered that rent gradients across the urban area are likely to either remain constant or increase over time and on that basis increases in land values per square metre on the fringe flowing from increased developer charges are likely to lead to increases in land values generally in the urban area, and possibly quite large absolute increases in the inner suburbs. (Land values per square metre in inner suburbs are on average four times higher than in outer areas) (Sub. 150, p. 3).

It is arguable, however, that while developed land prices in established areas would rise in response to increases in infrastructure charges, they may not rise as much as the increase in prices of developed land at the fringe. This is because land in established areas and fringe land are not perfect substitutes for each other – non-price factors such as proximity to public transport and employment will dampen any response to changes in land prices at the fringe. Hence, the price of developed land at the fringe *relative* to the prices of land in established areas could increase as a result of any increase to infrastructure charges on fringe developments. This means that the expansion of development at the frontier of our cities could be reduced.

These impacts were widely acknowledged by participants. Neutze, for example, stated that one of the claimed advantages of increasing developer contributions with regard to fringe developments is that:

... the higher prices of sites for new housing, and therefore of the housing itself, will reduce the demand for housing in newly developing areas relative to housing in established areas of cities. Another is that it encourages higher density of development both in new and established areas (Sub. 56, p. 3).

But what is the magnitude of these impacts?

Neutze considered that they may not be very large for a number of reasons. First, he considered that household preferences for detached dwellings are largely influenced by lifestyle and family composition rather than by relative cost.

Second, he noted that the costs of redevelopment can be relatively high. On this point he said further:

It might be expected that ... redevelopment and infill at higher density would be stimulated. That has not occurred to any great extent because the cost of providing a square metre of housing space in medium and high density housing is considerably higher than in a detached bungalow (Sub. 56, p. 4).

Finally, he considered that the impacts may not be large because the cost of infrastructure per dwelling does not vary greatly with changes in housing density in fringe developments. He said:

Any such savings are likely to be less than the higher cost of building at the higher density. Thus there has not been any great incentive to raise densities in new developments (Sub. 56, p. 4).

While available evidence considered in chapter B2 suggests that infrastructure costs are sensitive to densities, the relatively high construction costs of building at higher densities may outweigh any infrastructure cost savings (see chapter D4).

In response to the draft report, several participants commented on the magnitude of impacts from changes to infrastructure charges. Some suggested that charging reforms may not have as much of an impact as other factors. The New South Wales Department of Planning said:

... in Sydney, people make clear tradeoffs between location and dwelling type or land size, and dwelling price. People pay high prices for flats and small houses in inner city areas to take advantage of better locations (Sub. 150, p. 5).

The Brisbane City Council considered that:

... the costs of changing housing are significant impediments to adjusting location or extent of consumption. For this reason the benefits of pricing reforms might not be realised ... (Sub. 117, p. 4).

The New South Wales Social Policy Directorate said that most households express very strong preferences for remaining in their familiar areas close to established networks. The Directorate also noted the possibility that 'community preferences' may change as demographic changes occur such as ageing of the population (Sub. 150, p. 4).

Some participants suggested that the magnitude of the locational impact from changing charging levels would be significant. The South Australian Government said the:

... experience in Adelaide with land prices suggests that patterns of consumption are not always related to price. For example, prices in some remote but attractive areas (eg. Gawler and McLaren Vale) are greater than some more accessible areas (eg. Munno Para and Paralowie). Equally, at Golden Grove consumers have been willing to trade-off lot size for price to such an extent that small lots have had to be sold on allocation to preserve the objectives of the development. However, an overall increase in prices across the metropolitan area could be expected to affect demand, and historically has pushed consumers out to areas beyond the urban fringe where supplies of old (but usually unwanted) allotments exist. Such allotments are the legacy of land booms of thirty years ago or more, and are poorly serviced (Sub. 161, p. 12).

Leagh-Murray and Tait considered that:

Small increases in developer charges can have a dramatic impact on the market [and location] especially if raw land prices are high. This is certainly the experience in south east Queensland (Sub. 127, attachment, p. 5).

The Commission attempted to examine the magnitude of impacts arising from increasing infrastructure charges on fringe developments through a two part analysis.

The first part uses econometric techniques to examine the sensitivity of household choices between different densities of dwelling to changes in residential land prices and other factors. This assumes that households are geographically immobile and, hence, make choices about dwelling types within their current location. The results from that analysis are then used to estimate how changes in residential land prices would affect the demand for residential land.

In the second part of the Commission's analysis, the wider land use impacts of raising charges were estimated using a model originally developed by Horridge for Melbourne. Here, the locations of households and producers are allowed to vary throughout the city.

Determinants of demand for dwelling types

Household choice between dwelling types depends on income, land prices in the chosen neighbourhood, and on preferences which are influenced by household size and composition. The Commission has attempted to assess the role of these factors by analysing data on individual households in Melbourne and Sydney taken from the 1991 HALCS. Appendix B contains further details of the analysis.

Two aspects of household demand were highlighted:

- the extent to which households substitute between detached dwellings ('houses') and other dwellings (collectively called 'flats') in response to changes in residential land prices; and
- the sensitivity of overall demand for residential land to changes in residential land prices.

The HALCS database has a wealth of information along with some shortcomings. It does not measure the site area of each dwelling type. The site area has been inferred from the classification of the dwelling as a house or flat (houses were assumed to occupy twice as much land as flats). Further, the database does not measure the accumulated equity in housing of all owner-occupiers, only those without debt. Information is also lacking on moving costs which can be quite large for owner-occupiers. These shortcomings indicate that the results are more reliable for renters than for owner-occupiers.

The results of the analysis suggest that choices between dwelling types are not highly responsive to changes in residential land prices (see table 2). They indicate that if all residential land prices were to increase by 10 per cent, about 2 per cent of the households in each city would be induced to choose flats rather than houses. This would still leave the large majority of households in detached houses: 76 per cent in Melbourne and 80 per cent in Sydney. This translates to a reduction in demand for residential land as follows.

- A 10 per cent increase in residential land prices in Melbourne is estimated to reduce overall demand for land by 1.3 per cent. The estimated sensitivity at the fringe of Melbourne is even smaller, with demand for land reducing by 0.3 per cent.
- A similar pattern emerges from the Sydney results. A 10 per cent increase in residential land prices everywhere in the city is estimated to reduce overall demand by 1.1 per cent. At the fringe, demand for land is estimated to reduce by 0.7 per cent.

Responses are also modest with respect to changes in residential land prices for just one type of dwelling. If land prices increase by 10 per cent for houses while remaining unchanged for flats, the proportion of households choosing a house declines by an estimated 3.8 percentage points in Melbourne and 1.1 percentage points in Sydney. This equates to reductions in demand for residential land of 2.1 per cent and 0.6 per cent, respectively.

Table 2: **Sensitivity of demand for residential land in Sydney and Melbourne**

	<i>Sydney</i>	<i>Melbourne</i>
<i>Effect of a 10 per cent increase in all residential land prices</i>		
Net effect on probability of living in a house (percentage point change)	-1.9	-2.4
Change in demand for residential land (per cent)	-1.1	-1.3
<i>Effect of a 10 per cent increase in all flat site prices</i>		
Net effect on probability of living in a house (percentage point change)	-0.8	1.3
Change in demand for residential land (per cent)	-0.5	0.7
<i>Effect of a 10 per cent increase in all house site prices</i>		
Net effect on probability of living in a house (percentage point change)	-1.1	-3.8
Change in demand for residential land (per cent)	-0.6	-2.1
<i>Effect of a 10 per cent increase in residential fringe land prices.</i>		
Net effect on probability of living in a house (percentage point change)	-1.2	-0.6
Change in demand for residential land (per cent)	-0.7	-0.3

Source: See appendix B.

Although the results in table 2 are by no means definitive (if only because of data limitations), they permit some speculation about the impacts of increasing charges for infrastructure associated with residential development. Assuming that the increases in charges elevated serviced land prices throughout the city, and supposing that the increases in land prices were about the same percentage for dwellings at different densities:

- greater recovery of infrastructure costs would shift the mix of residential development within each neighbourhood toward higher density alternatives to detached houses, but the size of the shift would be modest;
- in the fringe areas, where residents tend to have a strong preference for detached houses, the shift to higher density dwellings would be smaller.

The DHHCS commented on the results of this analysis:

While accepting the data limitations which restrict the analysis to detached housing and flats, the responsiveness of the market is likely to be much greater if consideration was given to a much wider range of housing choices. Specifically attention must be given to the magnitude of change if attention is also given to options of dual occupancy, small lot housing, cluster housing etc. These forms of dwelling are also much more culturally

analogous with large block housing, and hence a better test of the issue of density rather than form (Sub. 155, p. 15).

The Commission's analysis assumes that site areas for each type of dwelling are constant, and that demand for residential land can change through substitution between houses and flats, but not through adjustments in lot sizes (among houses) or in site areas (among flats). Hence, one of the mechanisms by which changes in prices and income affect the demand for residential land has been omitted, biasing the estimated responses downwards. However, studies from the United States which included household-level data on lot size (Ohsfeldt and Smith 1990, Witte et al 1979) found that the demand for land still came out as price-inelastic with the estimates of own-price elasticity to be -0.3 or less (that is, a ten per cent increase in prices would lead to a 3 per cent decrease in demand).

The Commission examined the sensitivity of the estimated demand elasticities to changing the assumption about the 2:1 ratio of house to flat site areas. If larger ratios are more realistic, the elasticities will have been understated. However, the ratio would have to be substantially larger to change the nature of the findings in table 2. Even at a 4:1 ratio, demand for residential land is still not very responsive to a general increase of 10 per cent in land prices (and would lead to a decrease in demand of 1.8 per cent for Sydney and of 2.1 per cent for Melbourne).

The Commission also repeated the analysis for a restricted sample of full owners (assuming 2:1 house to flat site area) for whom it is possible to measure total income more accurately than for those who have partial equity. The results show that any mismeasurement of income biases the estimates of demand elasticities only marginally.

Horridge's urban land use model for Melbourne

In order to gain a better understanding of the impact that increases in charges on fringe developments could have on patterns of urban settlement in the long run, the Commission made use of a model constructed by Horridge for Melbourne (see appendix C for further details). As the factors governing land use patterns are extremely difficult to model, and are not all encompassed by the Horridge model, the results should be seen as *illustrative* only.

Horridge's model divides Melbourne into nine zones. It encapsulates household decisions about where to live and work, and how much land to live on. Key determinants of household decisions such as land prices, incomes and commuting costs are captured. It also represents producer behaviour, including the choice of how much land to use relative to other inputs.

In the Commission's application of the model, responsiveness to changes in land prices was based on the econometric findings discussed above.

The Commission simulated an increase in residential land prices in the outer zones of Melbourne of 10 per cent. (The choice of this illustrative price increase should not be taken to imply that infrastructure charges for fringe areas *should* increase by that amount.) The Commission estimates, on the basis of data provided by the UDIA for Cranbourne (a suburb in Melbourne's outer south), that such a price rise would represent an increase of less than 4 per cent in the selling price of a house.

The results of the simulation need to be interpreted carefully. They are not forecasts of changes over time, but estimates of the long run effects after the adjustments to higher outer zone land prices are completed. It is not possible to be precise about the length of the adjustment period, but the durability of buildings means that changes in the mix of inner city dwellings would occur only slowly.

The results from this simulation are presented for the nine zones and city-wide in table 3.

Population is predicted to shift toward the inner zones of Melbourne as residential land prices in outer zones increase. Since total population for the city is assumed fixed, the 2 per cent gain in population projected for inner zones exactly offsets the loss of 6 per cent for outer zones. Projected gains in the inner zones range from less than 1 per cent (inner east zone) to about 8 per cent (central zone). Projected losses in the outer zones are more uniformly distributed.

In the model, the increased demand to live in the inner zones of Melbourne generates a ripple effect on residential land prices, in which increased costs at the fringe lead to smaller proportional increases in residential land prices closer to central Melbourne. Residential land prices in the inner zones are estimated to increase by about 5 per cent on average compared with the 10 per cent increase simulated for outer zones. As a result, the demand for residential land per household declines as some residents switch to flats. Despite this, residential land area is projected to expand in the inner zones, due to the increase in population. City-wide, the number of households living in flats is projected to increase by about 9 per cent because of intra-zonal substitution and because of the move to inner zones where high land prices favour the selection of flats. Conversely, the number of households in houses is projected to decline by over 2 per cent. At 1991 levels, these shifts amount to an increase in the flat share of Melbourne dwellings from about 22 per cent to 23.5 per cent.

Table 3: Some long run regional effects in Melbourne of a 10 per cent increase in outer residential land prices (percentage change).

	<i>Central</i>	<i>Inner South</i>	<i>Inner East</i>	<i>Inner West</i>	<i>Inner North</i>	<i>Outer South</i>	<i>Outer East</i>	<i>Outer West</i>	<i>Outer North</i>	<i>City-wide</i>
Residents	7.8	1.8	0.6	4.5	2.2	-5.1	-6.6	-5.6	-7.7	a
Employment	-0.5	0.0	-1.5	-3.8	-1.0	3.5	3.7	5.4	3.6	a
Residential land prices	4.6	4.3	3.7	5.9	4.8	10.0	10.0	10.0	10.0	5.9
Land area:										
residential	4.5	0.9	0.5	2.6	1.1	-5.3	-6.5	-5.7	-7.6	-1.7
industrial	-5.2	-4.4	-5.3	-9.5	-5.9	3.5	3.6	5.4	3.6	-2.7
other	a	a	a	a	a	0.3	0.6	0.6	0.4	0.4
No. of households living in:										
flats	13.0	9.0	2.8	16.6	11.3	-1.0	-9.3	-3.0	-12.8	8.8
houses	-9.9	-0.2	0.3	b	-0.3	-5.5	-6.5	-5.9	-7.4	-2.2
Proportion of households in flats	4.9	6.8	2.5	11.5	8.6	4.4	-2.0 ^b	2.5	-5.0	8.8

a Exogenously set to zero.

b The decrease in the house to flat ratio reflect features of the model and the database.

Source: See appendix C.

Inner zone prices for land are assumed to vary in equal proportion across land use categories. Hence, the population shift towards the inner zones would stimulate prices in the inner zones for industrial as well as residential land. As prices for industrial land in the outer zones are assumed to be unaffected, this implies an incentive for producers to move to the outer zones. With total employment assumed constant throughout the city, the gain in employment in the outer zones of over 4 per cent matches the loss in the inner zones of less than 1 per cent.

The Commission's quantitative analysis suggests that the consumption of urban land in aggregate is not very responsive to changes in its price (and hence to changes in infrastructure charges). However, this does not preclude changes occurring in the pattern of land use within cities, as illustrated by additional modelling undertaken by the Commission. Eventual impacts

would depend upon the flexibility of land use restrictions and adjustment costs.

5.3 Equity and affordability implications of charging reform

Adoption of more efficient charging regimes will have impacts on the net income of some households, and thus may have implications for ‘equity’. The NHS argued for better infrastructure pricing to be put in place, but it also wants such a policy to be weighted so as to achieve particular equity objectives.

In one sense, efficient charging could be said to *promote* an equitable outcome, by ensuring that those who benefit from the supply of goods and services bear an appropriate share of the cost. This is known as ‘benefit equity’. Another concept, ‘access equity’, is concerned with enabling those with an inability to pay for goods and services to, nonetheless, enjoy access to some minimum level. The Commission will be further considering ‘access equity’ issues in its public housing inquiry.

Any significant changes in infrastructure charges would set in train a chain of impacts on the housing sector. While attention is often focused on the effects on new home buyers at the fringe, effects would also be felt by owners of established houses, new home buyers in non-fringe areas and renters everywhere. Changes in infrastructure charges would also have effects on the financing of public authorities because of consequential effects on the need for alternative sources of revenue. Increases in charges for infrastructure and services that reduce the need for transfers from rates or State tax revenues can leave governments free to lower tax burdens or to provide additional services to the population through other expenditures. The complexity of these effects makes analysis of equity impacts of changes in infrastructure charges difficult.

Housing affordability

The concept of the ‘affordability’ of housing encompasses those who own their homes, those who seek to own their own home, and those who rent. It relates to the ongoing cost of home ownership and renting relative to income.

‘Accessibility’, on the other hand is concerned with the cost of entering owner-occupied housing or a rental arrangement. In practice, however, affordability is often used as a general term to encompass both aspects. Access to housing is usually determined by the ‘deposit gap’ measure which estimates the difference between the price of housing and the borrowing capacity of households.

If increases in charges for infrastructure supplied to fringe developments caused land prices to rise, then the cost of housing would rise throughout the city. This would not only have an effect on all owner-occupiers, it would also have an effect on renters, as owners and purchasers of rental property sought a return on their investments to match the increased amount of capital represented by their houses.

While those already owning houses would enjoy a capital gain, those seeking to own houses would be made worse off; they would be obliged to devote more of their resources to housing either through higher rents or through purchase. The New South Wales Department of Housing (Landcom) said:

Recent studies suggest that 37 % of the Sydney housing market is first home buyers, that a 10 % undersupply of lots results in a 7 % increase in prices and that a 5 per cent increase in prices may force nationally 140 000 potential first home buyers out of the housing market. One may debate the total accuracy of these statistics but the underlying assumptions and broad effects are considered valid (Sub. 95, p. 6).

The UDIA submitted similar estimates of the degree to which price increases might reduce access to land (and hence houses). It provided a table on house/land package prices and capacity to pay by working income units (replicated below in table 4). It said:

A \$5000 increment can reduce housing opportunities for a relatively large number of Australian families. For lower cost house/land packages, each \$5000 increment results in over 130 000 families being unable to afford a home (Sub. 18, p. 8).

Both estimates suggest significant impacts of land price increases on accessibility to owner-occupied housing. However, while the data contained in table 4 provides useful information on incomes and house financing arrangements, the inference that a \$5000 increment results in 130 000 families being denied access to home ownership is not valid. Most families already live in houses – many as owner-occupiers. Indeed, home ownership in Australia is amongst the highest of all OECD countries. In 1986, the home ownership rate in Australia was about 69 per cent compared with around 64 per cent for the United States and the United Kingdom (Wood 1990b). For each \$5000 increment in price to deny owner-occupation to 130 000 families, it would be necessary to start from a position where no families owned their own homes.

At the initial public hearings, the UDIA acknowledged that, in terms of access to housing, the table is only useful in illustrating price impacts at the margin; that is, to those people who are in the market for a house.

The Landcom view links housing access to land supply problems. Indeed, efficient pricing of infrastructure is only one of several factors impinging on housing affordability and access. House prices are also affected by immigration policy which affects the demand for housing. State government institutional

factors such as land release processes are also important. Local government planning delays can also affect development costs (see part D).

Table 4: Housing and land costs and affordability for Australian families

<i>House/land package</i>	<i>Deposit (\$)</i>	<i>Monthly payments</i>	<i>Required income (\$)</i>	<i>Working income units able to pay ('000)</i>	<i>% of working income units</i>
90 000	18 000	758	30 320	2 390	58
95 000	19 000	800	32 000	2 264	55
100 000	20 000	843	33 720	2 130	52
105 000	21 000	885	35 400	1 972	48
110 000	22 000	927	37 080	1 834	45
115 000	23 000	969	38 760	1 719	42
120 000	24 000	1 001	40 440	1 553	38
125 000	25 000	1 053	42 120	1 430	35
130 000	26 000	1 095	43 800	1 356	33
135 000	27 000	1 137	45 480	1 229	30
140 000	28 000	1 180	47 200	1 124	27
145 000	29 000	1 222	48 880	1 070	26
150 000	30 000	1 264	50 560	948	23
155 000	31 000	1 306	52 240	892	22
160 000	32 000	1 348	53 920	795	19
165 000	33 000	1 390	55 600	729	18

Note: Based on the 1988 ABS Housing Costs Survey. The income levels in the 1988 Housing Costs Survey have been inflated to reflect the growth in household incomes since then. Assumes a 20 per cent deposit, an interest rate of 12 per cent and a loan spread over 25 years.

Source: UDIA, Sub. 18, p. 8.

Moreover, affordability and access to housing have been affected by the improved quality of housing. Studies in the United States note that after the Great Depression, building standards and codes proliferated and grew increasingly stringent. These widened the gap between new housing costs and the purchasing power of those on low incomes:

... the low-income housing affordability issue is real but remains an issue of income inadequacy colliding with higher prices required for a dramatically improved housing stock (Linneman et al, 1992, p. 370).

Nevertheless, most of these influences appear relatively minor in comparison with changes in interest rates. Macroeconomic management through monetary policy has been reflected in high interest rate volatility. In the late-1980s, as interest rates rose sharply to historically high levels, housing affordability fell significantly. Since then, however, the reverse has been true. The DHHCS said:

For people wanting to become home owners, accessibility to the tenure as measured by the Commonwealth Bank/Housing Industry Association affordability index is currently at its highest level since the September quarter 1985. Existing home owners have seen interest rates drop from a peak of 17 or 18 per cent in 1989-90 to 10 to 11 per cent. For a standard \$75 000 loan over 25 years, this means a reduction in repayments of around \$400 per month (Sub. 85, p. 62).

The Commonwealth Bank made a similar observation:

Reductions in mortgage interest rates and relatively weak house prices have combined to see housing affordability improve to its best level since late 1985 (Commonwealth Bank, 1992).

Several participants commented in their responses to the draft report on the affordability impacts of charging reforms.

The New South Wales Treasury referred to the ABS Household Expenditure Survey for 1988-89 which indicated that expenditure on electricity, public transport fares and water and sewerage rates represented less than 3 per cent of average total household expenditure in New South Wales. It said:

In this context the Treasury agrees with the Commission that the removal of existing location subsidies in the above and other areas of infrastructure provision is unlikely to significantly affect housing affordability (and locational choice) – indeed factors such as employment levels and variations in interest rates are likely to constitute much greater influences (Sub. 150, p. 3).

However, it also observed:

... this conclusion needs to be tempered somewhat with the recognition that such averaging provision may hide more significant impacts on particular urban locations characterised by different socio-economic mixes and the existence of more acute geographic or environmental challenges. However in generally recognising the affordability issue, Treasury is of the view that the range of pricing reforms suggested should be considered and implemented on a progressive or staged basis (Sub. 150, p. 7).

The Queensland Government said:

Higher charges may lead to enclaves where land is either cheaper with poor accessibility to services, or expensive because the land is well serviced (Sub. 153, p. 7).

Wilbow Peck Corporation (Qld) and Leigh-Murray and Tait took issue with the Commission's view in the draft report that increases in charges would not be particularly onerous for any identifiable community groups. For example, the former participant said that:

This depends on how large the charge might be and upon whom these charges might fall (Sub. 129, p.2).

Brisbane City Council said that:

Notwithstanding that the analysis of equity impacts of any possible changes in infrastructure charges regimes is difficult, it is imperative that the differences in impacts across various groupings within the community should be understood before changes are made (Sub. 117, p. 7).

Some participants considered that low to moderate income groups would be particularly affected by charging reforms. The New South Wales Department of Community Services said:

Generally, we feel that low to moderate income earners are being doubly disadvantaged. The report states that the prime determinant of first home owners is affordability ... We would maintain that for first home buyers, the difficulty of meeting the financial commitment in the early years of home ownership may have a detrimental effect on family functioning, particularly if they are linked with relative disadvantage, to access to services such as transport, health and child care (Sub. 150, p. 1).

The New South Wales Department of Housing said:

Whilst the Department is aware that there is a range of income groups located on the fringe as well as in established areas, as the Commission notes, increased charges would lead to increases in the price of housing across the metropolitan area, thus reducing housing affordability (across all tenures) for low and moderate income earners (Sub. 150, p. 4).

While the Commission accepts that capacity to pay any increase in charges will differ among households, **the mix of people's income levels, household types and ages in the different parts of major cities suggests that the effects of reforms which led to higher charges would not fall disproportionately on any identifiable community groups.**

Charging reform and the disadvantaged

Greater adoption of user pays pricing for infrastructure services would result in higher payments for some households, including some who may be considered disadvantaged. It may also result in better investment decisions, resulting in lower costs for everyone, including the disadvantaged.

To continue with less than total cost recovery has its own equity impacts. A significant part of the benefit of low prices is available to groups who fall well outside any definition of disadvantage. Kirwan noted:

... some households will benefit more than others from the absence of full cost recovery. In many cases those who would otherwise incur the higher level of charges are upper-to-middle income households - for example, for road use, water supply or flood protection works. The failure to target the implicit subsidy often results in a perverse or regressive distribution of assistance, helping least those who are most disadvantaged (NHS 1991a, p. 75).

Moreover, such subsidies have a cost, and the cost is often borne from rates and taxation and other forms of charging which may fall on households less well-off than those to whom the subsidy through lower prices is accruing.

In the draft report, the Commission said it considered that in general terms, a subsidy to fringe development is a relatively ineffective method of helping disadvantaged households – and the data contained in part A lends no support to the notion that fringe developments have a high concentration of disadvantaged groups. It is also relatively inefficient in assisting lower income households seeking home ownership. The Commission, therefore, favoured direct subsidisation of disadvantaged groups over indirect subsidisation through infrastructure charges.

A number of participants saw difficulties with this approach. The New South Wales Treasury said:

Utility pricing is an inappropriate mechanism for meeting income distributional objectives. Rather, a more effective means of realising such objectives involves direct assistance from general revenues to those deserving categories of people meeting the target specifications or criteria. In essence, as the Commission points out, people should be subsidised, not the places where they live or work (Sub. 150, pp. 7-8).

It noted, however that:

... the provision of such explicit assistance through the medium of Community Service Obligations (CSOs) can pose financial difficulties for the States given that redress of cross subsidies can result in a revenue neutral position for the utility involved (and hence dividends do not increase) while the funding of CSOs constitutes a loss to the Consolidated Fund. This represents another case for carefully staging utility pricing reforms (Sub. 150, p. 8).

The New South Wales Department of Housing said:

...whilst direct subsidy schemes may be of assistance to certain households, there are grounds for questioning how effective the arrangements would be in addressing the full range of lower income households, both renters and purchasers, that would be affected both in fringe areas and established areas. In addition, it is likely that such schemes would be relatively costly and complex to administer (Sub. 150, p. 4).

One participant noted how subsidies can be effectively delivered to localities. At the draft report hearings, the OLG noted:

... there are certain support services in one form or another – community development would be one – which seek to actively link people to services in one form or another and build up a sense of community which have to be delivered to localities. I don't believe that they can be delivered to individuals per se ... I draw fairly heavily on the experience [of] the western Sydney councils ... where they found it most important for a wide variety of disadvantaged groups in the community to employ officers to link them into services, to help them develop services in one form or another that meet their specific needs (DR transcript, p. 411).

Other participants, however, favoured the Commission's approach. The SWB said:

The notion of subsidising the individual is appropriate, as this introduces more effective targeting. A logical adjunct to this recommendation is that the onus needs to be moved from the supply authority to the appropriate welfare authority (Sub. 150, p. 2).

The UDIA said that the targeting of subsidies for meeting welfare objectives rather than interfering in the pricing of infrastructure services:

... is an important principle which deserves strong support. Implementation of the principle will contribute to more efficient provision of infrastructure. In addition, adherence to the principle would mean that public sector providers of infrastructure must be free of overt political interference – something which has not been a feature of Australia's infrastructure history (Sub. 106, p. 5).

The Commission is not convinced that indirect subsidisation through the manipulation of infrastructure charges is the most effective way of assisting disadvantaged groups. It is acknowledged that governments face budgetary constraints and that this favours reliance upon indirect forms of assistance. However, transparency is reduced. The real cost of subsidisation is not known, and endorsed, by the wider community.

The provision of subsidised urban infrastructure, or concessional charging for it, is not an efficient means of meeting equity objectives. Practical measures to shield deserving categories of people from hardship are better directed to them as people, rather than to the areas where they are thought to live, or to the city-wide networks of urban services they use.

The structure of charges

Concerns that upfront charges will constrain access by households at the margin to owner-occupied housing, led some participants to call for more emphasis on recurrent charging. For example, Yates said:

The argument against up-front user charges need not deny the potential validity of implementation of some form of price mechanism into infrastructure finance; it merely points to the compounding of inequities which can result from employing techniques which add to the front-loading of costs given the difficulties faced by some households in gaining access to affordable housing (Sub. 3, p. 5).

The equity impacts of different charging instruments are related to the efficiency impacts considered earlier. In principle, upfront charges and charges through time, which pay for the same amount of infrastructure and fall on the same group of users, should have similar impacts. In practice, there may be some differences due particularly to different interest rates applying to public authorities and households.

Usually, however, those who wish to shift the weight from upfront charges to recurrent charges, do so because they perceive that the impact of recurrent charges will be spread over a larger group of households. The UDIA argued for infrastructure to be funded by long term borrowings by public authorities and recouped through recurrent charges to users. The UDIA added that all users of services should be required to pay, not just the beneficiaries of new developments. While this approach would ameliorate the impact on development, it would clearly work against building a locational perspective into the charge. In response to the draft report, the New South Wales Department of Housing considered that the shift from upfront to recurrent charges could also be seen as a means of spreading the burden over a longer period of time (Sub. 150, p. 3).

The treatment of new and existing home owners

As noted earlier, the evidence suggests that developer contributions are capitalised in new house prices and that this flows through to prices for existing housing stock. The DHHCS said:

The resultant capital gain for existing landowners, without any corresponding differential rating practice for those who have, and have not, paid the upfront charge, is seen as resulting in an inequity (Sub. 85, p. 53).

The Department stressed that this situation is exacerbated where new home buyers not only pay upfront charges but also:

... contribute to the repayment of loans which were used to fund the provision of infrastructure to an earlier generation of home buyers (Sub. 85, p. 71).

This is also referred to as ‘double dipping’ although, as earlier chapters have discussed, it is the total impact of all charges that needs to be considered. Delaney (1989b) advocated some form of taxation to capture the windfall gain accruing to existing home owners from upfront charges on new developments. However, any capital gain can only be realised where home owners reduce their current standard of housing – any gain realised on sale would be offset in the price of changeover housing.

The extent of any windfall gain can also be reduced by ensuring that existing home owners make an appropriate contribution for their existing infrastructure (replacement cost). Indeed, there is much scope to vary charges faced by existing households since the dwellings are already established and the charge cannot affect their location (though households can move).

In the draft report, the Commission suggested that recurrent charges may need to be structured so that they vary between residents in new developments and those in established dwellings. In particular, it considered that established residents should at least face the cost of infrastructure replacement.

Several participants raised concerns about this proposal.

The New South Wales Social Policy Directorate was concerned that:

... shifts in the pricing of services to existing households (as opposed to greenfield households) can have subtle but significant equity effects. Although justified on ideal economic grounds, a number of other considerations must come into the equation. In reality, people's view of their relative positions have built up over time and have affected the choices they have made as well as the negotiations they have been party to. Sudden changes in pricing can therefore affect their relative position and create significant dislocation and equity effects (Sub. 150, pp. 1-2).

The New South Wales Department of Housing said that while it would, in principle, support equity in charging between residents in new areas and those in established areas:

In practice however, assessment of appropriate pricing structures to reflect replacement costs in established areas is considered to be highly complex and may be impossible with existing levels of data. In addition, it may hinder achievement of urban consolidation objectives (Sub. 150, p. 4).

Leagh-Murray and Tait noted that:

... internal transfers of revenue within a Local Authority from one infrastructure network to others could mitigate against this initiative (Sub. 127, attachment, p. 5).

The South Australian Government said:

The objective is to recover from prices, for all customers new and old, sufficient revenue to cover operating and maintenance expenses, current value depreciation and an appropriate rate of return on the written down current value of assets. Whilst this objective is not being achieved at present for water and sewerage services across SA, it must be acknowledged that there are limits to the rate of increase in charges which would be accepted by the community. Emphasis is being placed on getting the volumetric price 'right' whilst pursuing a major downsizing and efficiency improvement programme (Sub. 161, p. 13).

Brisbane City Council considered that mechanisms to cushion the effects of change on existing residents may need to be developed (Sub. 117, p. 7)

Nevertheless, the Commission considers that since residents at the fringe would desirably face the costs of infrastructure provision to them, **it would be equitable for established residents to at least face charges that matched the cost of replacing infrastructure required to service them and that charges for existing households should be examined as part of any reform of pricing structures.** This reinforces the need for differential rates of charging for services across different locations, and does not deny the possible need for gradual rather than sudden changes.

Intergenerational equity considerations

Intergenerational equity relates to the way actions by the present generation affect future generations. For example, advances in technology and the capital stock accumulated by this generation will be bequeathed to the next. Alternatively, the current generation may deny future generations access to certain natural resources. Indeed, the latter is an area of increasing attention which marks a departure from the traditional view that current generations confer a positive accumulation of wealth upon subsequent generations.

For this inquiry, intergenerational equity issues have been raised in relation to the timing of payments for, and the incidence of benefits from, infrastructure. The extent to which charging arrangements enable burdens to be shifted across generations is a subject of much debate. The issue boils down to a question of the impact of payments for large off-site infrastructure which has a long asset life.

The DHHCS commented on the more rapid cost recovery associated with BOOT arrangements (where the private sector builds, owns and operates infrastructure for a period and then transfers ownership to a public authority):

... through these arrangements the complete capital costs of a facility are covered, along with operational costs and a return to the developers/operators, by service charges over a relatively short period of the asset's lifetime (say, 15 to 25 years for assets with 50 or 60 year lives), after which the asset is transferred to the public sector. Obviously this transfers a benefit to later generations (Sub. 85, p. 53).

In its response to the draft report, the DHHCS noted that the period of cost recovery of BOOT arrangements does not take account of the selective nature of most BOOT provision. It said:

... this leads not to an equitable funding of facilities for future generations, but rather a highly selective taxation strategy on one set of users (Sub. 155, pp 16-17).

Some participants saw a problem with attempts to match the financing of infrastructure to its economic life. Kirwan notes that public authorities may find it difficult to borrow and schedule repayments over the long life of the asset—public bond issues of more than ten to fifteen years are uncommon. The DHHCS said:

While it has been argued that debt funding is an equitable way to spread the burden of funding capital facilities over a number of generations, its applicability for this function at a time of high real interest rates is much reduced. Attempting to equitably fund, over time, capital facilities with 50 year or more life spans, involves massive increases in the debt over the initial period of the process and is not compatible with a need to restrain public sector borrowings (Sub. 85, p. 56).

It is sometimes overlooked that when outstanding debt is paid out before the asset is fully depreciated, the population served by the asset can reasonably have

expectations of lower taxes and charges in the future. This would be reflected in prices for housing blocks. Through this capitalisation process, the benefits of any acceleration of payment streams can in principle be appropriated by the current generation. The NCPA noted that:

This is a sound theoretical argument but it relies on the widespread adoption of commercial pricing principles. To the extent that a considerable proportion of (user pays) infrastructure continues to be funded by cross-subsidies, any compensation through capitalisation effects will be diluted (Sub. 131, p. 13).

Furthermore, the NCPA considered that if:

... monopoly power is necessary for the recovery of capital well prior to the end of the useful life of an asset, it follows that failure to align prices with asset life risks substantial misallocation of capital resources. In other words, debt servicing vis a vis asset life is not just an intergenerational *distributional* issue, it may also have significant efficiency consequences including overinvestment in some forms of infrastructure or resource wastage in the design, construction and operation of major infrastructure assets (Sub. 131, p. 14, emphasis in the original).

There is also a relationship between financing of infrastructure and the level of private bequests. Early payment of the costs of infrastructure provision may imply lower bequests to future generations than would otherwise be the case. But if costs are paid more slowly, perhaps through long term loans, future generations may be left with larger private bequests but higher future requirements to make repayments. The level of private resources available to be transferred to future generations may be offset by obligations for future repayment.

The NCPA noted, however, that there is no necessary matching, at the individual level, between a lifetime infrastructure funding obligation and the capacity to make private bequests:

The latter is contingent upon a myriad of other factors rendering the use of the 'other things equal' analysis unconvincing (Sub. 131, p. 13).

As a practical matter, it may also be true that, to the extent that they benefit from infrastructure paid for by this generation, future generations may have to pay for the next increment of capacity which benefits the next generation. The NCPA noted:

The difficulty with this argument is that the 'community standard' for infrastructure provision is not consistent through time. Arguably, current generations will be called upon to make a greater collective bequest to the future than did past generations (Sub. 131, p. 13).

It is important to note, however, that future generations may suffer from poor investment decisions made today or in the past. For example, there is the possibility of future generations inheriting debt servicing on a 'white elephant' superseded by technological innovation. A more efficient charging regime will

assist in ensuring that the provision of new infrastructure does not arise in advance of need and unduly impact on the present or a future generation.

However, the NCPA noted:

... decisions can only be made on the basis of 'best available' information. Infrastructure funding policies cannot presume that usage and operational forecasts will always be unreliable. Such a presumption would bring into the question the whole concept of investing in long-lived assets (Sub. 131, p. 13).

It has also been argued that current market imperfections may lead to charges which are not efficient and, hence, can, therefore, affect future generations. The Australian Capital Territory Government said:

... imperfections in the market, particularly lack of knowledge, and inability to properly value and discount for effects on the natural environment ensure that the issue [of intergenerational equity] cannot be so easily resolved (Sub. 136, p. 8).

One participant commented on the difficulty in determining the full extent of intergenerational effects. The DHHCS said that there were a number of specific factors making this assessment difficult:

- the negative social justice outcome of the effect is in relation to housing affordability and it is difficult to disaggregate the factors which may affect this;
- the capital gain is only realised by existing property owners upon withdrawal from property ownership as it is incorporated into all property values by an overall shift in prices; and
- over a period of property purchases it is probable that a range of different pricing and taxation regimes will operate both directly on the property and more generally, each of which would have different 'equity' outcomes and hence generate a complex matrix of 'intergenerational winners and losers' (Sub. 85, p. 53).

The Department also noted the difficulties in determining whether previous home owners (rather than existing) reaped windfall gains in the face of changing cost recovery policies and said that:

... given the variations in the quality of services over time, including the extensive waiting periods experienced over the 1950s to 70s – and the use of general government revenues, and hence certain regimes at various stages ... simplistic inter-generational comparisons cannot be made (Sub. 155, p. 16).

The Commission agrees that it would be very difficult to comment on the net distributional effect of charging reforms between generations.

A question also remains as to whether governments would be more capable of taking a long term view which incorporates the interests of future generations, than members of the community.

B6 INSTITUTIONAL REFORMS

A number of 'institutional' changes would help to reduce the costs of urban infrastructure, and achieve a better match between costs and charges. These include facilitating private sector involvement in infrastructure provision and operation and ensuring that the practices of public sector providers conform with community objectives regarding service quality and the environment. A precondition for effective reform is a better understanding of existing costs.

6.1 Identification and reporting of costs by authorities

Increasing concerns about cost recovery have made public authorities more conscious of the need to attribute the costs of providing infrastructure to the developments concerned. Despite this, information about the costs of providing and operating infrastructure in particular locations remains sketchy.

Several participants commented on the paucity of information. The Department of Planning and Urban Development, Western Australia said:

A major impediment to creating a system of user charges on infrastructure that reflects the true costs of that infrastructure (including the costs of all externalities) is that the magnitude of these costs is largely unknown. While this is particularly true of the environmental costs, and externalities such as congestion costs, in the Perth context it is currently also true of direct infrastructure costs, particularly as they vary between localities (Sub. 49, p. 28, emphasis added).

With regard to existing assets and urban consolidation, the New South Wales Treasury said that:

The capacity of the existing infrastructure in established areas to meet increased demands due to higher densities is not generally known with any degree of reliability ... The picture is clouded by the age of some of the existing infrastructure and its inability to meet modern standards of operation (Sub. 70, p. 2).

Moreover, Burgan and Tisato pointed to the 'genuine' lack of data on the extent of spare capacity, and the cost and impact associated with infrastructure upgrading associated with increasing densities in existing areas. They said:

Even in South Australia, arguably the national leader in the area of establishing infrastructure data bases, information on spare capacity is not readily held (Sub. 56, p. 21).

In general, the accounting systems of public authorities, and capital works programs they publish, do not identify in sufficient detail the infrastructure works which extend services to new areas (AIUS 1989, p. 9). They also do not provide a

suitable basis on which decisions to provide infrastructure can be made. Where costs are to be allocated to a particular development, they should be calculated on a current replacement cost basis rather than relying on historical costs. Kirwan noted that:

Even more important is the fact that the true comparative costs of providing infrastructure are not the same as the apparent “short-run” requirement for capital expenditures ... A valid economic comparison, by contrast, would have to be based on the relative “long-run” replacement costs, which should form the basis for equivalent recurrent charges for “old” and “new” infrastructure alike (Sub. 56, p. 9).

In order that assets can be valued in terms of current replacement costs, the accounting methods of public authorities may need to be reformed in many cases.

Some public authorities have taken steps to obtain and report better information about locational costs. For example, the SWB gave the Commission data that identified the capital costs of providing hydraulic infrastructure to developments in particular areas. While such information relies on some arbitrary assumptions, it allows some comparison of costs and charges. The SWB is also examining the extent of locational differences in recurrent costs.

Some steps are currently being taken by authorities towards valuing assets on a current cost accounting basis. In addition, local government will be required to value infrastructure assets following the adoption of the Australian Accounting Standard AAS27. According to the New South Wales Department of Local Government and Cooperatives:

The actual methods to be used have yet to be finalised. The capitalisation of infrastructure (community) assets is considered necessary since they do wear out and since it is possible to predict with reasonable accuracy the useful lives of such assets. Additionally, such information is considered essential to the effective management of infrastructure assets (Sub. 70, p. 1).

The New South Wales Department of Planning has issued guidelines for local councils establishing developer contributions. The guidelines require plans to be produced which specify the land area and type of facility for which a council wishes to seek contributions, the justification for those contributions and a schedule showing current contribution levels, and how and when contribution monies are spent. The RTA has draft guidelines for assessing the cost impacts of the traffic generated by urban developments (Sub. 70, p. 7). The New South Wales Department of School Education is developing an asset data base. A component of this development is the valuation of its existing assets (Sub. 70, pp 10-11).

The South Australian Government noted that:

Various South Australia servicing agencies have been improving their information base on existing services by computer based mapping, which is a necessary prerequisite to aggregation of information about the assets themselves. However, there is a need to synthesise servicing and land use information to properly assess the state of existing systems (Sub. 161, p. 13).

The Local Government and Shires Associations of New South Wales, in their submission to the Parliament of New South Wales, recommended the establishment of a state-wide inventory of public infrastructure observing that there is little information about the total value of infrastructure within the public domain and less about its present condition.

The Associations argued that the inventory should be supported by, for example, an improved system of data collection; a clear statement of responsibility for each component of infrastructure for its maintenance and renewal; improved techniques for estimating the current depreciation of local infrastructure; and improved techniques for estimating the likely future outlays for the renewal and maintenance of infrastructure faced by local councils and other public authorities (Sub. 137, p. 19).

The identification and reporting of locational costs is important for a number of reasons.

- It would assist the public debate about urban consolidation, which is presently poorly informed.
- Improving the information base is essential if the level and structure of charges and investment decisions are to become more efficient. In particular, it is important that providers of infrastructure endeavour to identify accurately both capital and recurrent costs of new developments in order to determine who benefits and who should bear the costs.
- The reporting of cost information makes public authorities more accountable to the community for their charging policies. This transparency is especially important given that most authorities operate as monopolies.

Participants acknowledged the importance of identifying and reporting locational costs. The UDIA said:

It is essential that there is transparency of costs and charges by public authorities at all levels of government. This will help ensure that particular services are priced correctly and revenue is used for the stated purpose for which it was raised. It is particularly important that the practice of 'double dipping' is identified and eliminated (Sub. 18, p. 10).

The OLG saw information as central to the 'thoughtful planning' of urban areas and considered that local government is in a unique position to collect, aggregate

and analyse data on a broad range of urban development matters; such as cost, condition and capacity on infrastructure provision, maintenance, and rehabilitation and/or replacement (Sub. 139, p. 3). The Office further said that:

The Association of Inner Eastern Councils, Victoria, carried out a study to provide information on the methodology to be considered for establishing regional data base for urban infrastructure relevant to urban consolidation prospects for a group of Councils ... The report states that it is inevitable that local government will begin to establish infrastructure data bases ... Data collected at the local level will benefit bodies responsible for planning at the metropolitan level (Sub. 139, p. 12).

The New South Wales Treasury said:

Where urban consolidation occurs in a fairly diffuse manner this [status of existing capacity] may not present significant problems – and this has probably accounted for the relative paucity of information, to date, regarding the status of the existing infrastructure. However, where major redevelopment, particularly involving a major change in land use (eg industrial to residential), is proposed, then the need for improved information on the status of existing infrastructure becomes a far more critical issue (Sub. 150, p. 2).

Lack of information is a fundamental obstacle to reform of infrastructure charging and better asset management. Public sector providers of urban infrastructure should be required to compile and publish annually the costs, revenues and charging structures associated with development in different areas within their administration. Information is also urgently needed on the value and condition of existing infrastructure throughout the cities.

A number of participants largely agreed with this view, and some made additional suggestions. The SWB said:

Some guidelines need to be developed to ensure that all authorities report the costs in the same manner, and in particular how to treat overheads etc. There is also a lack of information concerning cost reporting and it is suggested that data be collected concurrently with the development of guidelines (Sub. 150, p. 2).

The DHHCS said that the recommendation should also include:

... the publication of a range of performance indicators which would permit inter-state as well as inter-location comparisons to be drawn (Sub. 155, p. 17).

Costs are not all that should be reported. It is also important that the financial and other parameters (such as population and demography) underlying investment decisions are subject to public scrutiny through appropriate review processes. This would ensure that public authorities are accountable for their decisions to invest in economic and social infrastructure.

6.2 Special development areas

As chapter B3 has discussed, locationally differentiated charges – whether developer contributions or recurrent charges – transmit locational costs better than uniform charges. Indeed, charges could be tied to special development areas.

Special area charges are sometimes levied for particular purposes. They may be based on costs or property values. As chapter B4 has shown, developer contributions for infrastructure are often targeted to particular areas.

Special area charges of a recurrent nature are not as common in Australia as in the United States, where they are widely used. However, there is some evidence that public authorities, particularly local councils, currently levy charges or special rates for particular purposes and on particular areas. As the New South Wales Department of Local Government and Cooperatives said:

Local rates [in New South Wales] may be levied for special purposes in a local area (for example, to improve a particular urban area). Local rates are levied on the basis of the land value of rateable land in the locality that will benefit. However local rates are currently still subject to overall total rate pegging constraints and special accounting provisions apply (Sub. 70, p. 4).

The Brisbane City Council levies a special rate on particular properties for the cost of constructing malls in the central city and Fortitude Valley (Sub. 45, p.17 and chapter C5). The New South Wales Department of Transport noted that the *Catchment Management Act 1989* provides for a management trust to levy charges on ‘catchment contribution areas’ to fund its program to the extent that the land benefits (Sub. 70, p. 33).

The Local Government and Shires Associations of New South Wales considered that there is greater scope for the use of special rates as a supplementary device to finance infrastructure. However, to enable this to occur, the Associations considered that there is a need for:

- a clear commitment that special rates will fall outside any rate ‘pegging’ arrangements; and
- general acceptance of the principle that for infrastructure (or improvements to infrastructure) which benefits some parts or areas, the local community should bear the cost (Sub. 137, p. 21).

Several participants expanded on the benefits of special area charges. Neutze noted the existence of ‘special districts’ in the United States where the costs of infrastructure provision are financed by the public sector and recovered from a specially levied property tax. He said that as a result:

... housing costs [for owners] are lower than with upfront charges, but the costs of servicing each district are borne by property owners in each district rather than being spread throughout the taxing jurisdiction (Sub. 12, p. 4).

The New South Wales Department of Transport expanded further on the benefits of special recurrent charges which it described as a ‘benefit assessment levy’. It said:

- the benefit assessment concept represents a more equitable approach in that the beneficiaries include both new and established parties;
- benefit assessment can be levied over time and thus provide an income stream to support borrowing compared to development contributions which provide the capital to undertake the infrastructure development; and
- benefit assessment can provide a better matching between contributions and infrastructure costs (Sub. 70, p. 33).

For special area charges to work effectively, reforms to current institutional arrangements may be required. Under current institutional arrangements, the signals given by special charges may be unclear because people do not believe that charges will hold into the future. Charging arrangements are changing now and may do so again.

This is more of a problem for the levying of special recurrent charges than for developer contributions which, by their nature, are ‘one-off’.

The NCPA considered that developer contributions are inferior to more direct and ‘transparent’ infrastructure access charges. It suggested that the institutional constraints affecting the adoption of arguably superior mechanisms such as benefited area levies need further exploration (Sub. 131, p. 17).

Nevertheless, the levying of developer contributions can have implications for the setting of special recurrent charges. For example, in exchange for the levying of developer contributions there may be implicit or explicit agreement between the developer and the authority that recurrent charges to a particular area are to be lower than other areas. Such an agreement would be feasible as developer contributions would reduce the need of public authorities to borrow to finance infrastructure provision and, hence, reduce their costs of servicing debt.

If public authorities decide to levy special recurrent charges, whether or not in conjunction with developer contributions, to ensure a clear signalling of prices, purchasers of developed blocks must believe that such charges will continue to hold at the level indicated. Otherwise, expectations that the charges can be changed or even abolished might lead to political lobbying. This can arise if residents consider that they can avoid paying a special charge and shift the burden onto even newer residents (or onto older ones), or if they believe that other residents may shift their burdens onto them. Burgan and Tisato said:

... there is a long history of failure of political will to impose area-specific “benefit” charges as an annual charge (Sub. 56, p. 27).

This situation seems to have arisen in Sydney where the SWB had agreed with developers in the Hoxton Park area to upgrade drainage around the Cabramatta Creek to reduce flooding. A supplementary charge reflecting the locational costs of works was to be payable by residents in the area. Following community pressure, the charge was dropped and proposed drainage works were suspended.

One way of providing certainty that special charges will hold is to tie them more closely to the area. This could be done by ensuring that charging levels and the area affected are set out in legislation or in contractual arrangements.

The choice between legislation and contract will depend on the circumstances. Legislation might be more appropriate for charges set by local councils by ensuring that charging decisions by one group of councillors are not likely to be reversed easily by councillors who are elected in later elections. ‘Sunset’ provisions specifying when special charges are to end may also provide certainty. With GBEs, contractual arrangements with each household could be consistent with any moves towards commercialisation.

Some public authorities have advised the Commission that they could not levy special area charges because of legislative constraints.

The Commission recommends that public authorities providing infrastructure examine the possibility of using contracts or legislation to govern the provision of services to residents of particular areas in exchange for a set of charges that relates to the capital and recurrent costs of servicing that area only. If legislative provisions prevent public authorities from implementing special area charges, it would be worthwhile for State governments to review the need for them.

6.3 Increasing private sector involvement

Private sector investment in public infrastructure is now on the agenda of a number of States and the Commonwealth for a variety of reasons including:

- a wide perception that the current stock of infrastructure is inadequate and/or inappropriate and this acts to increase industry costs and impede economic growth;
- changes in the pattern of demand for infrastructure;
- the decreasing ability of the public sector to fully meet the need for infrastructure development because of fiscal constraints (including global borrowing limits);
- a perception that the private sector may bring greater effectiveness and efficiency to the provision of infrastructure; and
- increasing support for the application of user pays principles to infrastructure pricing as a means of ensuring its efficient use (Queensland Treasury 1992, p. 2).

A number of governments have issued investment guidelines to encourage greater private sector involvement in infrastructure provision. For example, the Queensland Government issued guidelines which provide information about many issues including assessment and approval processes and financial and taxation matters. They are intended to:

... simplify the systems, and clearly and logically communicate to participants the processes and procedures required to facilitate private sector involvement in infrastructure provision in this State (Queensland Treasury 1992, p. 3).

To complement these guidelines, the Queensland Government has also issued guidelines for the preparation of economic appraisals of infrastructure projects. These appraisals will assess the relative economic and social costs and benefits of proposed undertakings and will apply to public sector capital projects as well as proposals involving private provision of infrastructure in Queensland (Sub. 153, p. 16).

Guidelines by the New South Wales Government involve the publication of strategic capital works plans by public authorities identifying infrastructure needs; identification of points of contact between the private sector and public authorities; and clarification of the conditions and principles underlying the provision of infrastructure by the private sector, and criteria for assessment when expressions of interest are invited (Sub. 56, p. 24).

(A discussion of taxation arrangements applicable to private infrastructure provision is in chapter C3).

Increasing private sector involvement in the provision of infrastructure and services can bring efficiency gains. Kirwan said that:

Private sector operators are likely to pay greater attention to the staging of investment – reflecting the higher effective cost of capital and shorter pay back periods – and to achieving an efficient balance between investment and maintenance costs ... Private sector management is more likely to identify and concentrate on the scope for cost savings and for more efficient and cost effective investment strategies than its public sector counterparts (NHS 1991a, p. 103).

However, the nature and extent of efficiency gains will vary according to what type of private sector involvement is contemplated. An important issue is whether or not ownership of infrastructure is held by the public sector. For example, some participants claim that monopoly pricing and operational inefficiencies may accompany private sector ownership of infrastructure displaying natural monopolistic characteristics.

BOOT

Under BOOT arrangements, the private sector ‘builds, owns and operates’ the infrastructure for a period and then ‘transfers’ ownership to a public authority. The DHHCS said that:

Such initiatives primarily use debt financing which is repaid during the operating period resulting in an unencumbered asset being transferred (Sub. 85, p. 51).

There are currently several examples of joint ventures between the private and public sectors which resemble a BOOT arrangement. For example, a BOOT arrangement applies to the F4 tollway in western Sydney, where the private sector will operate and own the road for a fixed period after which ownership will transfer to the RTA.

Several participants noted the benefits of these types of arrangements. Kirwan said that BOOT:

... offers one way of ensuring that infrastructure is provided and funded without cost to public expenditure or borrowing, while retaining a long-run “equity” interest in the assets. Provided that suitable safeguards are built into the underlying contract about, for example, pricing policy and maintenance standards, it offers a practicable method of ensuring that new “justifiable” needs are met without an additional strain on public budgets (Sub. 56, p. 13).

While BOOT arrangements can relieve public authorities of the burden of raising finance to undertake capital works, the extent to which these arrangements lead to efficiency gains depend, among other things, on the process leading up to the award of the contract, the terms of the contracts, and the monitoring and enforcement of them. For example, gains in terms of lower construction costs are

most likely if the contract is awarded by competitive tendering. Moreover, Kirwan considered that:

Contracts should ... be designed to strike an appropriate balance between the right of the private provider to the assurance that the initial costs can be recouped and the threat, that the contract will be wound up and awarded to another party if it is abused, necessary to ensure that the current provider stays efficient.

The awarding of a number of contracts to different private organisations – albeit that each remains a geographically specific natural monopoly – can also help to encourage efficiency through “benchmark” competition (Sub. 56, p. 13).

While BOOT arrangements can help to lower the cost of providing infrastructure, they cannot, in themselves, ensure that the services provided are priced efficiently. Where there is limited or no competition in the provision of services, the problems associated with the setting of efficient prices can become even more significant where the expectation of a commercial return on capital (which is above a rate of return that would prevail in competitive circumstances) is part of the arrangement.

For this reason, **a major consideration in the framing of BOOT should be the specification of charges which will encourage the efficient use of infrastructure.**

Contracting out

Contracting out of infrastructure works by public authorities can take simpler forms than the BOOT arrangements described above. For example, public authorities can contract out minor construction works and design.

There is evidence that public authorities are making greater use of contracting out. For example, a number of local councils contract out waste disposal services and road works. SEC Victoria said that it was moving towards contracting some of its activities out to the private sector (Sub. 30, p. 4). In Sydney, a private sector consortium has entered into an arrangement with the SWB to construct and finance hydraulic services for the Rouse Hill development. On completion of the works, ownership of the assets will transfer to the SWB which will over time pay for the asset through developer contributions as development of the Rouse Hill area proceeds (see box 1).

Some participants referred to the advantages of contracting out. Walsh noted in relation to the arrangement between the private sector consortium and the SWB with regard to the Rouse Hill development that:

In essence, the principal benefit of this arrangement derives from deferral of public expenditure, with the Water Authority better able to match outlays against revenue from charges (Sub. 56, p. 23).

Box 1: Private sector involvement: the Rouse Hill development

The Rouse Hill development is in the north-west of Sydney. The first stage release areas comprise approximately 5000 hectares and include Rouse Hill, Kellyville and Parklea. Development of these areas are expected to proceed at the rate of 3000 residential lots per annum over the next ten years.

The Rouse Hill Infrastructure Consortium consists of major land owners including both public sector and private sector organisations. The Consortium is primarily involved with the first stage release areas, although it intends to ultimately service the whole of the Rouse Hill development. The chief executive of the Consortium, described its involvement in the north-west sector as:

... a major initiative for private sector involvement in what have traditionally been areas of government undertaking in the development of new major urban release areas in Sydney (Nedeljkovic 1991, p.15).

The Consortium will provide off-site water, sewerage, and drainage infrastructure to the Rouse Hill development on behalf of the SWB. It will undertake design, construction and commissioning of the works. In addition, the Consortium will liaise with other infrastructure providers, principally the RTA, the Prospect County Council, Telecom and AGL Gas Companies, to ensure that all necessary and desired economic services are available to the proposed development.

The provision of hydraulic works is to be financed by loans provided by the banking consortium which is to take a charge over the assets of the Consortium as security. One such asset is the contract with the SWB under which the Board is required to take over outstanding debt at a set time. Loans are to be repaid by the payment of developer contributions to the SWB as development occurs. This arrangement will reduce SWB's funding requirements.

The Australian Federation of Construction Contractors said that:

... private sector contractors are more economic and efficient than day labour units ... The competitive nature of the private sector ensures keener prices and hence better value per construction dollar than is obtainable from the employ of day labour (Sub. 53, p. 14).

However, other participants had reservations about contracting out. The Trades and Labour Council of Western Australia said:

The contracting out of work and the use of consultants can also provide benefits; where particular expertise is drawn on and services are provided at lower cost than they would otherwise. However, contractors and consultants to public enterprises and government departments may over-charge. Moreover, if the enterprise does not develop its own skill base its ability to utilise and benefit from the work of consultants is diminished (Sub. 50, pp. 13-14).

The OLG argued that many provincial local councils are located in areas where there is not adequate competition between contractors to ensure maximum cost effectiveness. Consequently, contracting out in these areas will not always realise expected cost savings (Sub. 139, p. 9).

While there are difficulties with contracting, it can reduce the costs of providing infrastructure if done in an appropriate manner. Competitive tendering, monitoring and enforcement of contracts, and competent contract documentation are critical to the achievement of efficiency gains. Competitive tendering would ensure that infrastructure costs are kept low. Monitoring and enforcement of contracts is necessary to ensure that performance criteria are met. Competent contractual documents are needed to ensure the intended allocation of responsibilities is achieved.

Private ownership of urban infrastructure

Private ownership and, therefore, responsibility for the construction and operation of infrastructure is becoming more common in Australia for some types of services. Shopping centres, and some schools, hospitals, and sporting facilities are privately owned.

However, much infrastructure continues to be publicly owned in Australia compared with other OECD countries. The Commission notes the Victorian Government's recent decision to privatise the SEC Victoria.

Privatising the ownership of infrastructure can lead to some efficiency gains. For example, the threat of takeover can encourage better management. However, some participants considered that the scope for this kind of private sector involvement is limited because of the natural monopolistic characteristics of infrastructure. In the context of privatising public authorities, Kirwan said:

There is rightly concern that the privatisation of what is necessarily a form of "natural monopoly" may open the door once more to inefficiency and price-gauging. These are risks that need to be considered carefully (Sub. 56, p. 13).

The Trades and Labour Council of Western Australia said:

Many public providers of infrastructure are natural monopolies. A privatisation policy may involve the breaking up of these large units with less than optimum plant sizes being the result (Sub. 50, p. 13).

Where infrastructure displays natural monopoly characteristics, private sector ownership does not reduce the need for government regulation. For example, in the United Kingdom, privately owned water authorities are subject to extensive economic regulations covering tariff setting, financial performance, levels of

services, and investment and asset condition which are administered by the Office of Water Services. Kirwan said:

The privatisation of monopoly services should not be allowed to proceed without adequate regulatory safe-guards about price setting. Inexperience on the part of government with this form of regulatory control may be a limiting factor (Sub. 56, p. 13).

Clearly, there are tradeoffs associated with the private ownership of infrastructure. Evidence as to whether or not there are net gains in efficiency remains ambiguous.

6.4 Household provision of urban infrastructure

There are technologies which are relevant to the provision of infrastructure at the household level. For example, Newman and Mouritz (1992) noted the emergence of technologies in the waste water area. These include modified septic tank systems with soil amendment around leach drain to neutralise nutrient contamination (for example, Eco-max); aerobic treatment systems (for example, biocycle); and composting toilets.

While common in rural areas, the provision of infrastructure at the household level is limited in most urban areas in Australia.

Households in existing and new areas may have responsibility for the replacement and maintenance of some on-site infrastructure. For example, in Canberra, households have responsibility for replacing deteriorated water and sewer mains between the house and the street.

Where household responsibility for maintenance and replacement exists, standards are often imposed by the relevant public authority. For example, the SWB require that certain plumbing standards with regard to the size and quality of water mains be met.

In addition, households are often restricted by local government regulation or by GBEs as to what on-site infrastructure they can have. Regulations tend to be prescriptive.

For example, in Sydney, local councils are empowered to approve the erection of rain water tanks. Each council sets its own development evaluation procedures in relation to them. Under the *Local Government Act 1919* all councils are required to ensure water tanks are mosquito proof (Sub. 151, p. 2). In Melbourne, councils have certain building, town planning and health regulations which also vary from council to council. In Canberra, rain water tanks are only permitted if they satisfy the design and site requirements of the NCPA.

Restrictions are also imposed by water authorities. For example, the SWB does not permit a direct cross connection between a rain water tank and the mains water supply. A similar restriction is also imposed by Melbourne Water.

With septic tanks, households are not permitted to have them in Canberra if sewerage services are available. Similarly, in some parts of Sydney (for example, Hornsby), households with septic tanks are required to remove them once sewerage services become available.

The reasons for these types of regulations often include the protection of public health (for example, water collected in water tanks may be contaminated), the protection of the environment (for example, effluent in septic tanks can leach into the water table), or the preservation of residential amenity (for example, water tanks may be thought to detract from the aesthetic aspects of a neighbourhood).

In this context, the SWB said that:

Rain water collected from the roof of a house can be unhealthy to drink. After falling on a roof it may pass through decaying leaves and bird and even animal faeces. It can also become contaminated by lead flashing, paint and other chemicals. Even before rain water reaches the roof it may have been contaminated by air pollution (Sub. 151, p. 3).

However, such regulations can limit household choice as to the type and quality of infrastructure on their property and deny the opportunity for technological change to address various community concerns such as public health. For example, there may be situations where households prefer a lower standard of infrastructure than that mandatorily imposed upon them. Also, minor technological changes can remove health hazards.

The Commission considers that regulations restricting the provision of urban services on-site by households should be subject to greater public scrutiny. This could involve local councils undertaking a review of regulations and inviting public comment. **Regulations should be made more-performance oriented and less prescriptive.** For example, instead of specifying particular site and design standards for a water tank, regulations could require that a water tank be compatible with residential amenity and indicate that a particular site and design standard (including an international standard) is deemed to comply.

The South Australian Government agreed with the Commission's views. It also noted that this is the current direction taken by South Australia's planning and building legislation (Sub. 161, p. 14).

In addition to regulations, the incentive for households to provide on-site infrastructure may also be affected by the charging policies of public infrastructure providers. For example, the failure of many local government authorities to impose volume related charges for the collection of garbage from

residential neighbourhoods could reduce the incentive of households to compost organic wastes or otherwise recycle on-site.

6.5 Coordination of infrastructure provision

Coordination between authorities providing infrastructure can exploit any economies of scale associated with construction. For example, AGL Gas Companies said that in New South Wales:

... gas was disadvantaged by having no guaranteed early access to new sub-divisions (unlike some other utilities), and that costs of reticulation increased if gas was supplied later.

This unsatisfactory situation in NSW contrasts with practice in South Australia. On new SA estates, there is a “common trench” set aside for three services (electricity, gas and Telecom), and installation of those services is co-ordinated among the utilities and developers (Sub. 35, p. 7).

Some participants considered that there was scope for more coordination of infrastructure provision. The New South Wales Treasury said:

... financial and other problems have arisen through critical agencies not having sufficient input before decisions are made on future release areas. The result has been under-or non-utilisation of installed water and sewerage infrastructure, poor provision of transport services, and urban development in areas which are physically unsuitable (Sub. 70, summary, p. 2).

The Local Government and Shires Associations of New South Wales claimed that there is a fundamental lack of coordination between State and local governments about development needs and strategies. According to the Associations, the New South Wales Government’s own coordination mechanisms appear to be weak and, in many instances, have failed to embrace all the relevant infrastructure agencies. For example, public transport is often non-existent in newly developed areas (Sub. 137, p. 10). The Associations went on to say that:

At the local level there is an acute awareness of the failure to co-ordinate the infrastructure investment decisions of different, mainly State, government agencies. All too often Local Government is left to find ways of making good the deficiencies created by the failure of State Government agencies to provide adequate infrastructure when it is needed. A good example is road investment (Sub. 137, p. 9).

Consequently, the Associations recommended greater coordination and consultation between State government agencies and local government to ensure that the planning of future development sensibly relates to plans for the provision of infrastructure and financial resources available for the task.

Walsh said that:

To focus in particular on residential development, governments at all levels might appropriately be required to prepare “master plans” for infrastructure provision in the areas planned for development in relation to major water supply and sewerage works, trunk drainage and major roads as well as for social facilities. These plans would indicate the authority’s intentions and developers would be required to comply with such plans or otherwise submit alternative plans for approval (Sub. 56, p. 10).

Walsh argued that this would assist in the ‘orderly development’ of land and in the provision of infrastructure at minimum cost to the developer and the community (Sub. 56, p. 11).

Another approach stresses the role of the developer as a coordinator and purchaser of infrastructure and services. In some cases, the coordinating role of developers is given legislative backing. For example, the AGL Gas Companies noted the existence of New South Wales legislation designed for urban consolidation projects which enable developers to coordinate the scheduling of utility services. It said:

... the “Community Titles” legislation ... obliges developers to ensure that all services are located in a methodical manner, generally in a common trench excavated by the developer. The developer must co-ordinate installation of all services before the subdivision is registered (Sub. 35, p. 7).

The Commission favours a greater coordinating role for developers. This would be consistent with their role in adding value to raw land. Moreover, developers have an incentive to ensure services are provided at the appropriate time and cheaply.

However, coordination requires contracts between public authorities, and between public authorities and the private sector. For example, the RTA contracts out major road works in Sydney to local government authorities, and so indirectly benefits from section 94 of the *Environmental, Planning and Assessment Act 1979*. AGL Gas Companies said that in constructing gas mains, gas distributors must obtain the consent of and enter into licence agreements with a number of public authorities (Sub. 65, p. 6)

The Commission notes that sometimes contractual arrangements might be difficult to make because of vocal community opposition. For example, negotiations between a private company and the New South Wales Department of Health to build and operate a hospital at Port Macquarie were almost stalled because of political and community opposition. Nevertheless, public authorities, when entering contractual arrangements which are likely to be sensitive, should consult and inform affected communities as early as possible.

More importantly, once contracts are made they should be enforced. This behaviour is consistent with commercial practice. It also creates an incentive for the party undertaking construction works to perform in accordance with the terms of the contract.

While the private sector is not averse to undertaking mediation and litigation for contractual breaches, it appears that public authorities exhibit some reluctance in enforcing contracts with other authorities. This may have stemmed from judicial pronouncements in the past regarding the immunity of the Crown (or ‘Shield of the Crown’) from civil litigation.

Another factor is that the political links between public authorities have not been completely severed. In the case of local councils, any commercial relationship they have with State authorities may be undermined by their political relationship. For example, New South Wales State authorities are enjoined from litigating against each other in civil courts. Disputes between authorities are resolved through the implementation of procedures laid down either in an enabling statute (for example, the SWB) or administrative guidelines.

Legislative or administrative impediments to public authorities, particularly infrastructure providers, entering into and enforcing contractual arrangements should be removed.

6.6 Improving public sector operating efficiency

Efficiency gains in the operations of public authorities can be achieved by institutional arrangements that clearly specify commercial and non-commercial objectives, remove political interference in the operations of public authorities, ensure greater accountability, increase competition to discipline performance wherever possible, and limit the exercise of monopoly power through performance monitoring and regulation.

A variety of institutional reforms can be implemented which are compatible with these principles and suit the circumstances of particular public authorities including local government. In recent years, the Commission has examined and proposed institutional reforms for the water and waste water, rail transport, and energy industries. It is presently examining institutional reforms for the urban public transport industry in another inquiry.

Much is being done by authorities themselves to achieve operating efficiencies. For example, the New South Wales Department of Transport noted that City Rail is achieving efficiencies and cost savings by shedding about 7000 staff through to 1995-96. It said that 60 per cent of the predicted staff reductions are due to high

cost capital investment in improved technologies such as signalling and communication (Sub. 70, p. 15).

Governments have also taken measures in this area. For example, the DHHCS noted:

... in recent years action has been taken to improve the productivity of public enterprises, particularly through corporatisation. This has entailed the development of discrete management structures free from direct government involvement and control, specification of clear corporate goals and other requirements such as return on capital (Sub. 85, p. 34).

As already noted in previous chapters, the New South Wales Government has established a prices tribunal which is to review price increases for public sector utilities which operate under monopoly conditions mainly in the areas of water, sewerage, electricity, and public transport. The New South Wales Treasury said:

The tribunal will have a consumer protection function but there is an expectation that the tribunal will give due consideration to the requirements for public authorities to earn an adequate rate of return on their assets and the need for price rebalancing to improve the efficiency of their operations (Sub. 70, p. 8).

As a result of the special Premiers' Conference in July 1991, the Commonwealth Government and State and local governments are examining the national performance monitoring of a range of GBEs including those involved in the energy, rail, water, ports, and public transport sectors.

Reforms to the operations of local government are also being examined. For example, the Local Government and Shires Associations of New South Wales noted that performance indicators were being developed for local government in New South Wales (transcripts, p. 572).

The Commission supports the continuing pursuit of reforms in the costing procedures and pricing structures of public authorities to inform and improve their investment decision making.

6.7 Better asset management

Participants expressed some concerns about the current management of infrastructure. One concern relates to the 'goldplating' of infrastructure. It is argued that authorities impose standards which are unreasonably high. For example, Homeswest said:

The tendency to require all services to be designed to account for the worst possible case results in additional costs to both the servicing authority and the developer and a system that, for the vast majority of time is substantially underutilised (Sub. 57, p. 6).

Barcrest Developments said that

In the land development process the local authority sets the standards and [accordingly] should be [responsible] for the costs of those decisions. By passing the costs to the developer, the alderman can blame the developer for the high price of land if there is a complaint from the ultimate “user who pays” – the householder/ratepayer ... With this arrangement the Local Authority can (and does) set standards that are much higher than would be applied if it had to raise the rates to meet the cost (Sub. 125, p. 1).

Another concern relates to the premature or, alternatively, late timing of infrastructure provision – particularly in relation to the provision of social infrastructure and public transport – to fringe areas. The New South Wales Department of Health said that due to constraints on its capital works program:

... [it] generally establishes hospitals and other facilities later than required. This causes the people in new urban settlements to have to travel greater distances than persons who reside in established parts of our community (Sub. 70, p. 1).

The Department of Planning and Urban Development, Western Australia said that:

A more consolidated, public transport ‘friendly’ urban form could be encouraged by providing public transport infrastructure and services as early as possible in the development process. The absence of comprehensive public transport services in the early stages of new development means that people have to turn to alternative modes, usually a private car, to meet their transport requirements. Having made an investment and established a dependency on car travel, people are generally unlikely to convert to public transport at a later date when better services become available (Sub. 49, p. 17).

A third concern relates to the adequacy of existing infrastructure. The DHHCS said:

While there is debate as to the existence of a general shortfall in infrastructure in Australia, there is evidence of areas of potential or actual areas of under investment and inefficiencies in the provision of infrastructure. EPAC [1991] identified clear deficiencies, particularly in health, childcare and education, in some regions, while Kirwan [1991] identified problems with roads and public urban transport (Sub. 85, p. 33).

Finally, there is concern about the rationalisation of existing infrastructure, in particular social infrastructure. The City of Noarlunga noted that the South Australian Government was reluctant to close under-utilised facilities (such as schools, hospitals, pre-schools, and transport) to provide resources for facilities in growth areas (Sub. 43, p. 2). As Latham said:

Western Sydney has one-third fewer hospital beds than the State average and 30% less funding per capita than the rest of Sydney. That is, the region with the worst personal health record receives the smallest share of public health resources. Yet the State’s politicians have failed to advocate the closure of inner-city hospitals and transfer of specialist services to Sydney’s west (Latham 1992, p. 79).

Often this stems from local community opposition. As Walsh noted:

... as a result of local political pressures, it often has proved difficult to close down and dispose of underutilised assets – especially schools and hospitals – in order to free capital funds for urgently needed new facilities (Sub. 56, p. 10).

But sometimes, opposition may come from the service providers themselves. For example, Latham said in relation to hospital closures:

Fear of publicly confronting the medical professions has overwhelmed the interests of equity (Latham 1992, p. 79).

Many of these problems would be overcome by better pricing signals obtained by charging reforms considered in chapter B4, including charging for the costs of maintaining excess capacity. More efficient charges will lead to better management of existing assets and better decisions about investment in new infrastructure.

Improved information about asset values and the standard and capacity of existing infrastructure will also lead to better management decisions.

Public authorities must also be prepared to make and adhere to decisions to close down or rationalise facilities where necessary. The Commission recognises that political process may prevent this from happening, but considers that authorities could go some way to improving the way they consult and inform affected communities of their proposals to rationalise.

New infrastructure designs and more innovative uses of existing infrastructure can also promote better asset management especially in relation to social infrastructure. The Watson Community Association noted alternative uses undertaken in some existing (and former) schools in north Canberra.

However, the New South Wales Department of School Education noted some of the difficulties associated with introducing alternative uses of existing schools. It said that:

Schools in areas of declining population often utilised ‘surplus’ accommodation for school, community or revenue raising purposes. This makes it very difficult to determine an acceptable policy for rationalisation of resources within an operating school. Where a decision is made to utilise vacant school accommodation in an operating school, it must be implemented within the necessary constraint of ensuring compatibility of use (Sub. 70, p. 11).

Public authorities can improve asset management by acquiring better information about the value and condition of existing infrastructure. Governments should maintain an arm’s length relationship with their GBEs and not seek to direct their general pricing structures away from commercial criteria.

6.8 Restrictions on entry

Restrictions on entry are common for the provision of most urban services. Many public authorities providing services operate as statutory monopolies (for example, the SWB). Even where services are privately provided, governments restrict entry (for example, the provision of some bus services).

Entry restrictions can lead to high prices and, hence, affect choices with regard to the use of particular services. For example, by inflating the price of taxi services, entry restrictions effectively discourage the use of this flexible form of travel in favour of other forms such as private travel by motor vehicle. As shown in chapter A3, much travel undertaken at the fringe is circumferential. **Entry restrictions for the provision of urban transport services constitute a penalty to fringe settlement as well as leading to increased private car ownership and use.**

A common reason for giving a statutory monopoly to some public authorities is to ensure that services are provided to everyone – that is, to ensure there is universal access to services. It is argued that entry restrictions are necessary to achieve this community service obligation (CSO) as they enable the provider of the services to cross-subsidise between users (for example, Australia Post).

General revenue sources are a more transparent form of funding CSOs than cross-subsidies between users and do not distort relative prices of services. The Commission considers that **CSOs can and should be identified and fully funded from general revenues.**

In some areas of public transport such as taxi services, removal of restrictions on entry would lead to lower overheads and more competition which would provide an incentive to the providers of services to lower prices. However, the removal of entry restrictions may raise compensation issues, for example, in the case of the taxi industry where entry restrictions have been capitalised into the cost of taxi plates. The gradual easing of restrictions can help adjustment in these kinds of services.

Even in industries where natural monopolistic characteristics are claimed to exist, the threat of competition (also known as contestability) might be sufficient to induce incumbents to keep prices and costs down.

PART C

**TAXATION AND OTHER
GOVERNMENT FINANCING
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PART C: TAXATION AND OTHER GOVERNMENT FINANCING ISSUES

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PART C TAXATION AND OTHER GOVERNMENT FINANCING ISSUES

Taxation measures affect urban form in a number of direct and indirect ways. Most obviously they affect housing, through the taxes that are imposed on housing values and transactions, and the treatment of owner-occupied housing.

Chapter C1 looks at recurrent taxes on housing and land. Land taxes, which are very important to State and Territory budgets, are said to be important influences on the pattern of urban settlement, because of the way they are levied, and the range and extent of concessions provided. It is also often argued that tax policy towards owner-occupiers encourages investment in owner-occupied housing, and that rates concessions generate disincentives to transfer or relocate. These matters are reviewed in the chapter.

Stamp duties are the subject of chapter C2. They are said to discourage mobility across dwelling types – and encourage modifications and alterations – as household characteristics change with the life cycle and with social trends. The chapter examines the importance of stamp duties, and of the range of exemptions and concessions provided.

A more indirect taxation influence arises from the taxation of private providers of infrastructure. If taxation arrangements constitute an impediment to private provision, infrastructure may be inadequately provided and the pattern of urban settlement distorted. This matter was raised by a number of participants in this inquiry and forms the subject of chapter C3.

Besides these specific taxation issues, it is also argued that taxation must be seen in a broader context. If tax bases are used which impact (adversely) on urban settlement, this may be partly a result of restrictions on the options open to governments. State and local governments are said to be particularly affected.

Reductions in Commonwealth funding, and their inability to tax incomes, are said to have forced the States and Territories to rely heavily on a few taxes which, as a consequence, are very significant sources of revenue to them. These include land tax and stamp duty.

The role of Commonwealth-State financial arrangements, and in particular fiscal equalisation, is raised in chapter C4.

Local government rates are examined in chapter C5. A major question is the balance to be struck between reliance on general rating policies and on specific charges on users and developers. This choice will be influenced by, amongst

other things, the extent to which the structure of charges can be tailored to reflect the cost of specific infrastructure and services supplied to particular landowners. These issues are given detailed attention in part B of this report.

C1 TAXES AND CONCESSIONS ON HOUSING AND LAND

Land tax is an important component of State revenues. In a pure form, it would be potentially less distorting than other forms of taxation available to the States. However, the base is greatly narrowed by exemptions offered to a number of activities. Investment in owner-occupied housing is encouraged by the favourable tax treatment it receives relative to other forms of investment. It is exempt from land tax and capital gains tax, and imputed rent is not taxed. Rental accommodation, however, is not treated as favourably. This chapter considers these taxes and their effects on urban form.

Taxes on land have in the past been imposed at Commonwealth and State levels, sometimes with the specific intention of affecting land use. For example, a graduated land tax at the Commonwealth level was introduced by the 1910-13 Labor Government with the aim of breaking up large rural estates. The requirement to meet death, inheritance and gift duties also often led to the breakup of large rural estates and valuable estates in urban areas.

Commonwealth land tax was abolished in 1953. One of the arguments for its abolition was that it was no longer achieving the objective of breaking up big estates. Commonwealth estate and gift duties were abolished on 1 July 1979. The abolition of death duties at the State level began with Queensland in 1976. All States had abolished death duties by 1983.

While death, inheritance, gift duties and Commonwealth land tax have been progressively abolished, there remains a number of taxes which affect housing and land.

1.1 Land tax

Land tax is an annual tax on the ownership of land.¹ It is a significant source of revenue for all States and for the Australian Capital Territory (see table 1), but is not imposed in the Northern Territory. Some classes of users, including most owner-occupiers and those whose properties are valued below a threshold level, are exempted.

¹ In the Australian Capital Territory, land tax is imposed on leases of land.

Table 1: The importance of land taxes to State/Territory revenues

	<i>1989-90</i>		<i>1990-91</i>		<i>1991-92</i>	
	<i>Land tax (\$ m)</i>	<i>As a % of total taxes^a</i>	<i>Land tax (\$ m)</i>	<i>As a % of total taxes^a</i>	<i>Land Tax (\$m)</i>	<i>As a % of total taxes</i>
NSW	657	8.1	760	8.9	826	9.1
Vic	307	5.6	416	7.2	465	7.5
Qld	137	5.0	197	6.9	228	7.4
SA	72	5.3	76	5.0	76	4.6
WA	91	5.1	114	6.0	132	6.6
Tas	21	4.5	27	5.1	28	5.0
ACT	10	3.1	13	3.5	19	4.4

a Total taxes refers to total revenue obtained from taxes, fees and fines.

Source: ABS 1993, *Taxation Revenue Australia, 1991-92*, cat. no. 5506.0.

Land tax is imposed upon the unimproved value of land, or on a variant known as the 'site' or 'land' value. The unimproved value is the price the land would bring if sold, assuming that improvements to the land (such as buildings) had not been made.

Land taxes in their purest form are less distorting than other taxes. They are often thought to have little impact on allocative decisions because the supply of land is fixed. In other words, unlike the supply of labour or the manufacture of physical capital, the amount of land available cannot be influenced by taxation.

The Henry George League put the view that governments should impose a charge on land values, eventually collecting the entire rental value of all land as taxation revenue, and that in time this would enable them to abolish all other taxes (Sub. 8, p. 3). Taxation of land 'betterment' in this way is said by some to be a method by which State and local governments may gain some of the increase in the value of land which is suitable for urban development. It is sometimes argued that these taxes are justified because value is added to land by the provision of infrastructure, although this would be offset to the extent that such infrastructure was paid for by developers. (The taxation of land betterment is taken up in part D.)

One difficulty with land taxes more generally is that they are rarely imposed uniformly on all land, even within particular jurisdictions. As a result, decisions about the purpose to which land is put can be significantly affected. Moreover, the cost of administering and collecting land taxes can be high relative to other forms of taxation.

Much of this analysis of land tax focuses on the impact of deviations from uniformity in the way that land is valued, the rates at which taxes are imposed,

and on the exemptions that are given. It is these that may affect the pattern of urban settlement.

Land tax rates

Land tax rates imposed in each State vary considerably (table 2). Most States have a general threshold value below which tax is not payable, and a progressive rate structure. While New South Wales now has a proportional rate structure it retains a threshold exemption, thereby making the tax progressive in impact. The Australian Capital Territory imposes land tax on a proportional basis with no threshold.

Table 2: Land tax rates for each State and Territory, 1991^a

<i>State</i>	<i>General threshold</i>	<i>Land tax payable (\$)</i>
New South Wales	\$160 000	There is one rate of \$100 + 1.5% of the excess over \$160 000.
Victoria	\$180 000	There are three rates ranging from \$60 + 0.15% of excess over \$180 000 for land valued \$180 000-\$469 999, up to \$32 445 + 3.0% of excess over \$2 600 000 for land valued \$2 600 000 or more.
Queensland	\$160 000 ^b	There are 19 rates varying from 0.2% for land valued up to \$3 999 to 1.8% for land valued at \$1 500 000 or more.
South Australia	\$80 000	There are three rates ranging from \$0.35 for every \$100 or fractional part of \$100 of the excess over \$80 000 for land valued \$80 001-\$300 000, up to \$11 270 + \$2.30 for every \$100 or fractional part of \$100 of the excess over \$1 000 000 for land valued \$1 000 001 or more.
Western Australia	\$5 000	There are nine rates ranging from \$12.50 + 0.35% of the excess over \$5000 for land valued \$5 001-\$9 999, up to \$1940 + 2% of the excess over \$150 000 for land valued \$150 000 or more.
Tasmania	\$1 000	Has three different classifications; general rate, principal residence rate, rural land rate. For all three the general threshold is the same. Similarly for land valued between \$1 001 - \$14 999 the rate is a flat \$25. The rates for each classification then vary above \$15 000. For the general rate there are a further eight different rates, ranging from \$25 + 0.75% of the excess over \$15 000, for land valued \$15 000-\$39 999 up to \$8 962.50 + 2.5% of the excess over \$500 000 for land valued \$500 000 or more. For the principal residence the top rate is \$170 for land valued \$65 000 or more. For rural land the top rate is \$645 for land valued \$250 000 or more.
Australian Capital Territory	-	Flat rate of 1%

a Some State governments have recently announced changes to the general exemption threshold and rates to apply from 1993. For example, Victoria is to increase the general exemption threshold to \$200 000 with some changes for the rates scale also scheduled.

b This liability threshold applies to residents of Queensland, other than companies and trusts. There are also rural and some small business concessions. The tax largely falls on the corporate sector.

Note: The table is illustrative of the types of rates imposed. It is not comprehensive.

Source: CCH 1992.

A strong argument against progressive rates is the impact that they have in diverting landholders' efforts into establishing the legal fiction that their land is held by a number of owners. For example, the South Australian land tax review noted that the South Australian *Land Tax Act 1936* does not contain grouping provisions and found that:

... it is a relatively straightforward matter to avoid the progressive land tax scale by splitting ownership between a number of entities with common shareholdings (Hill 1990, p. 59).

The review recommended the introduction of a proportional rate of tax. (It also recommended that there be no general exemption threshold.) It said that a proportional tax structure would remove the incentive which exists under a progressive structure to disaggregate landholdings, as land would be taxed at a single rate regardless of who owns it. The South Australian Government rejected these recommendations. It said:

... such changes would act too harshly on small businesses in the present economic climate (Blevins 1990).

The Government retained a progressive tax structure but reduced the rates applying to properties of less than \$1 million in order to minimise the impact of rising land values.

The Victorian land tax review acknowledged this problem and judged that grouping provisions in the *Land Tax Act 1958* were inadequate and needed tightening (Fordham 1991, pp. 168-9).

Progressive taxes on land are often seen to be more equitable than proportional taxes in the sense that apparently wealthy people are taxed proportionally more highly than the less wealthy. However, it is not always the case that wealthy people bear more of the burden of land tax. The New South Wales tax task force found that:

... there is a wide variety of methods of ownership of land and it is simply not true that the owners of the most valuable land have the greatest capacity to pay tax ... property trusts, superannuation funds and life insurance companies are amongst the largest owners of land subject to land tax in New South Wales ... (Collins 1988, p. 256).

It is valid to argue that those with valuable assets, but low income, are still wealthy. Equally of course, those with small landholdings are not necessarily poor. Because wealthy people are able to hold their wealth in many forms other than land, concessions for those with little land may also give benefits to those who are in other ways quite well-off. Moreover, wealthy people can also own a large number of small landholdings which may enable them to benefit from a progressive rate structure.

This highlights the problems encountered in attempting to reconcile redistributive objectives with what is essentially an important revenue raising instrument. For these reasons, the redistribution objective would be better left to more broadly based taxes.

Defining the base for land tax

At present, land tax is levied in all States on unimproved values. The question of whether buildings should be included, however, is a continuing source of debate.

Unlike land taxes on land itself, the amount of improvement to land could be affected by taxation. The New South Wales tax task force said:

... a tax on the value of land and improvements, besides raising problems for valuation of the improvements, would reduce incentives to make the best possible use of the land because of the taxation attached to the improvements constructed on the land. Depending upon the options available to the owner, the taxation of improvements as well as the unimproved capital value of the land might well adversely affect the economic use made of the land, compared with a tax levied solely on unimproved value (Collins 1988, p. 237).

If improvements were included in the land tax base, both development and redevelopment would be likely to be scaled down. To the extent that less building occurred overall, there could be a reduction in the area of cities. This change would not be desirable (as the New South Wales tax task force implies) unless such a reduction were an objective in itself.

A tax on improvements would be likely to result in more land remaining undeveloped for urban purposes. The Department of Planning and Urban Development of Western Australia noted that:

... unimproved values have the advantage of encouraging the development of land to its full potential, to generate an actual income flow to offset the land tax expense. On the other hand, [gross rental values] may discourage such development (Sub. 49, p. 20).

But it saw some administrative advantages in including improvements in the base:

Nevertheless, there may be some administrative cost savings associated with a move to a [gross rental value] based land tax system. Indeed, it may no longer be necessary for the Valuer General's Office to produce such values, and [gross rental values] are sometimes easier to measure than unimproved values (Sub. 49, p. 21).

Improvements to land are made in more ways than just buildings – increases in value through the provision of infrastructure (and perhaps even including social infrastructure), for example, would usually be included in the value of land assessed for land tax. It seems likely that under land tax they would be discouraged.

Increasingly, government authorities which supply infrastructure are responding to the price signals given by the demands of those wishing to settle in particular areas. With trends to make this transmission of signals even more direct (see part B), the impact of land taxation on infrastructure may become even more important.

In general, however, this problem is likely to be much less significant than any attempt to include values of buildings in the base for land tax. **The inclusion of buildings in the land tax base would detract further from the neutral characteristics of land tax.**

Valuation procedures

In all States except Victoria, valuations are undertaken centrally by the States' Valuers-General. In Victoria, valuations are conducted by individual municipalities and coordinated by the Valuer-General with other rating and taxing authorities using these valuations.

Adjustments are made periodically for changes in land value. In Victoria and Tasmania (and in New South Wales until 1993) the unimproved value of the land is adjusted annually by an 'equalisation factor' in order to adjust the land value to a figure approximating the commercial worth of property in a particular locality between official valuations. (In its 1992-93 Budget, the New South Wales Government announced that the equalisation factor would be abolished.) This periodic adjustment can cause cyclical problems in the supply of serviced land.

The Department of Planning and Urban Development, Western Australia raised the issue of the land tax payment procedure. It said:

A concern that is sometimes raised by land developers is that land tax arrangements deter the development of lots in the period leading up to 30 June as they will have insufficient time to sell the blocks and so incur land tax on the higher (improved) values. This, it is claimed, creates a cyclical pattern in the production of lots which may result in a shortage of lots at certain times of the year (Sub. 49, p. 22).

One major problem with the valuation procedures is the time lag between valuations which occurs in some States and between valuations and land tax assessment. Intervals of three to five years are common.

The Building Owners' and Managers' Association is critical of land tax

valuation procedures and is reported as saying that:

... it takes four years for metropolitan municipalities, and up to six years for non-metropolitan municipalities, to turn property valuations, on which land tax is based, into assessments ... the boom-time land values of 1989 would be used as the tax base for Victoria in 1993 (*The Age*, 22 July 1992).

The Victorian land tax review concluded that:

In reference to the valuation system, the three and a half year lag between the actual or equalised land values used for assessment purposes and the commencement of land tax assessment period creates mismatches between the year the tax liability is incurred and the year the valuation for tax purposes is determined. This mismatch is exacerbated when the site values used for assessment purposes are based on a particularly strong growth period in the property market, whereas the current growth in land values may be relatively weak or even negative (Fordham 1991, p. 120).

Some State governments have attempted to minimise the effects of time lags. For example, the Western Australian Government (1992, p. 4) announced a freeze on land tax valuations at 1991-92 level for the 1992-93 financial year. The South Australian Government (1992) announced that it would limit growth in aggregate land tax receipts to zero in 1991-92 and to the estimated growth in the consumer price index for Adelaide in each of the following two years.

However, most States are attempting to reduce the lags by reducing the periods between valuations. For example, the Queensland Government (1992) announced that it would reduce the time lag between valuation and land tax assessment from 15 months to six months. It also said that:

... a scheme is in place to provide relief when land values increase significantly. It ensures that the annual increase in the value of an existing parcel of land, for the purposes of land tax, is limited to 50% of the previous year's taxable value. This has successfully filtered the effect of significant rises in land values recorded by the Valuer-General in recent years (p. 19).

In Victoria the lag between valuation and assessment dates is to be reduced from three and half years to one and a half years in 1993. New South Wales is to adopt annual valuations of properties subject to land tax.

Out-dated valuation lists lead to perceptions of inequity among taxpayers, when the valuations are used as a tax base. In New South Wales, local councils pay for the official valuations of their areas; the same and supplementary valuations are generally used by the State Government for purposes of land tax. Improvements in allocation of responsibility for funding the provision of valuation services may help to improve the timeliness of the services.

Exemptions

The major exemptions from land tax include principal place of residence, rural and government land and land valued below the general threshold. The general exemption threshold in those States where it is quite high, such as New South Wales, Victoria and South Australia, can lead to the exemption of many rental and commercial properties. Other exemptions include land owned by charitable, religious, and in some States, sporting associations and educational bodies if used for those purposes.

As a result, the incidence of land tax primarily falls on industrial and commercial properties with land values over the general threshold. The Victorian Government said:

It should be noted that the burden of land tax falls largely on the corporate sector; for example, households accounted for only 16 per cent of total assessed land tax in 1989 although they comprised some 74 per cent of the total number of land taxpayers. The thousand largest landholders in Victoria contribute about 70 per cent of total assessed land tax (Sub. 41, p. 24).

In accord with standard principles of taxation, the tax is deductible for Commonwealth income tax.

Exemptions are often so extensive that it is possible for some people to arrange their land holding such that they are covered by a number of exemptions. For example, the New South Wales tax task force found that:

Under present policies, Pitt street farmers can obtain exemption from land tax for their valuable owner-occupied home in Sydney, exemption for their primary production activities undertaken for tax shelter purposes and the basic exemption of \$125 000 on other taxable land that they own (Collins 1988, p. 250).

The extent of erosion of the base through exemption may be measured by the revenue forgone at current tax rates. For example, a review of land taxes undertaken in Victoria found that a further \$211 million of revenue could have been raised in 1990 if exemptions other than that for Crown land were removed (Fordham 1991, p. 55).

In South Australia, the land tax review found that, in 1989-90, a further \$50 million in tax revenue could have been raised by removing the exemption of land used for primary production. Removal of the exemption of principal place of residence could have raised \$11 million. It found 21 562 landowners out of a possible number in excess of 400 000 are required to pay land tax (Hill 1990, p. 66).

Similarly, in New South Wales a net increase of \$1.9 billion in revenue could have been raised in 1986-87 through removal of exemptions (including the general exemption), over half coming from removing the exemption of owner-

occupied housing, and another quarter from removing the exemption of land used for primary production (Collins 1988, p. 240). In a paper entitled *Problems with State Taxes*, Collins (1992) found that actual land tax revenue (\$346 million) in 1986-87 represented 16 per cent of total potential revenue (p. 10).

Exemption for principal place of residence

As noted, except for Tasmania and Victoria, land used for principal place of residence is exempted from land taxes. In Victoria the general exemption threshold is such that the majority of owner-occupiers do not pay land tax. Beyond the general exemption, Victoria offers specific exemptions and concessions for pensioners for land used as principal place of residence. Similarly Tasmania offers exemptions from land tax to certain pensioners.

In April 1992 the Tasmanian Government announced a reduction in land tax on principal residence by 10 per cent, and that the maximum payment on general land tax assessments up to \$100 000 would be cut to \$500, with appropriate adjustments for other general land tax payments above that level (Sub. 86, p. 7).

When lands used for other purposes are taxed, the exemption for owner-occupied housing encourages the use of land for housing. There can be little doubt that this would provide an undesirable incentive to urban sprawl, were it not for the fact that land used for many alternative purposes is also untaxed.

As a general rule, however, if some urban lands are to be taxed it would seem desirable to include land used for owner-occupied housing, as it accounts for a major urban land use. In this vein the South Australian land tax review found that:

... the exemption of owner-occupied houses from land tax has the effect of distorting economic choices between home ownership and other uses of land, resulting in a tax-induced allocation of resources to residential development in preference to other income-producing uses of land (Hill 1990, p. 74).

Some moves have been made to widen the land tax net to include more of land used for owner-occupied housing. The New South Wales tax task force suggested this, although its grounds were primarily to do with equity and revenue forgone. It recommended that the land tax base include lands used for owner-occupied housing but with an exemption for the first \$500 000 in land value. The task force did not envisage that many owner-occupiers would be subject to tax if the recommendation was adopted. Upon the tabling of the Collins Report, this recommendation was immediately rejected (New South Wales Government 1990, p. 460).

A major concern with the exemption of lands used for owner-occupied housing has been the fact that land used for rental housing is not exempt. However, in

New South Wales and Victoria the general threshold is such that it may exempt some rental housing either wholly or partly. To the extent that rental housing is taxed, this has almost certainly led to an undue penalty being faced on land being used in this way rather than for owner-occupied housing. The New South Wales tax task force proposed equal treatment for rental and owner-occupied residential property, implying taxation of rental property only if its value exceeded \$ 500 000:

The removal of land tax for most rental properties would also substantially increase incentives for land to be used for productive purposes, especially where appropriate to provide rental accommodation. This measure would assist the economic development of New South Wales by lowering the level of rents in the longer term and by encouraging the more productive use of the available supply of land (Collins 1988, p. 249).

In 1988 New South Wales introduced an exemption for new rental residential developments. Under this initiative the land tax liability of investors in new residential developments where construction commenced between 2 June 1988 and 1 January 1994 and which were ready for occupation before 1 January 1995 (single dwelling) or 1 January 1996 (any other) is to be waived for five years (Longley 1990, p. 17).

From the 1990 land tax year, exemptions from land tax were extended to include owners of metropolitan boarding houses. This was aimed at encouraging the availability of low cost accommodation (New South Wales Government 1990, p. 140). In the 1992 Budget, the New South Wales Government (1992a) said:

While we cannot afford tax concessions in this Budget, when our revenues significantly improve the Government will undertake a staged expansion of land tax concessions to other forms of low rental accommodation, besides boarding homes. Of course, it would be desirable to abolish land tax on all rental dwellings so that they are put on par with owner-occupied housing. However, this is not financially possible as long as we have such a narrow tax base (pp. 34-5).

The exemption on principal place of residence in New South Wales is conditional on the property being less than 2100 square metres. This is intended to encourage subdivision within urban areas to thereby maximise the use of public transport (New South Wales Government 1992c, p. 60). The New South Wales Government's *White Paper on Land Tax* (1992c) found that:

As the intention of the size limit was to encourage subdivision there would appear to be some justification for providing tax relief to property owners in cases where planning restrictions prevent subdivision of land within a reasonable timeframe (p. 60).

The White Paper recommended that owner-occupied properties exceeding the current size limit in cases where planning provisions prevent subdivision of the property from proceeding within a five year period should be exempt from land tax (New South Wales Government 1992c, p. 60). This recommendation was

accepted and is to be implemented in the 1993 land tax year (New South Wales Government 1992b, p. 3.6).

Recent moves by some State governments have seen an increase in the exemptions from land tax available. The Commission considers that these 'new' exemptions further distort the current land tax system and place an even greater burden on the existing narrow base.

Exemption for government bodies

Land owned and used by governments is generally exempt from land tax in each State. New South Wales exempts gas and electricity supply authorities and some other public authorities. Victoria exempts some lands vested in public statutory bodies, the Victorian Government recently announced changes to the exemption granted some public authorities. The Australian Capital Territory exempts the ACT Housing Trust. The remaining States exempt government bodies.

The South Australian land tax review said:

... exemption from land tax of land held by local government bodies is but one example of a wide array of reciprocal arrangements whereby different levels of government (Federal, State and local) exempt each other from their respective taxes and charges (Hill 1990, p. 81).

These exemptions have particular impact where the government authorities are involved in land development. Western Australia's Department of Planning and Urban Development said:

Homeswest, the State's public housing authority, is exempt from land tax which it is widely claimed gives it an unfair competitive advantage over private land developers. While a continuing exemption might be justified on the basis that Homeswest develops land for lower income earners (and is not a profit-making enterprise), the additional land tax revenue if the exemption were removed could also be used by Government to provide public benefits (Sub. 49, p. 22).

Clearly, the exemption for a major developer such as Homeswest has the potential to have a significant effect on the extent of development undertaken in those parts of the market in which it operates and perhaps more generally throughout the city.

The situation is gradually changing. With the exception of the ACT Housing Trust, departments and authorities in the Australian Capital Territory pay land tax. The Fordham review in Victoria recommended that statutory bodies currently paying a public authority dividend, such as the Urban Land Authority and the Transport Accident Commission, should have their exemption from land tax removed.

Similarly, in response to the Longley report, the New South Wales Government (1990) announced that:

... over time, Land Tax will be applied to Government Trading Enterprises as they become classified as 'fully commercial' (ie. become profit making or break even). Currently land tax is paid by the Darling Harbour Authority, the State Bank, the GIO and Graincorp (p. 142).

These trends are to be welcomed. Governments and their authorities including local councils, are significant users of land and the exemption which is generally offered them is likely to lead to inappropriate location and over-consumption of valuable land relative to commercial bodies who pay land tax.

Telecom and Australia Post have in recent years become progressively eligible for all State taxes and charges. However, the bulk of Commonwealth land is not subject to land tax. While, strictly speaking, it is unconstitutional for the States to tax the Commonwealth, the Commission understands that there are a number of options available which would enable the States to receive land tax payments from the Commonwealth.

The Commonwealth can enact legislation which would remove this immunity from States taxes from any authority of its creation as it has done in the case of certain commercial authorities like Telecom. Alternatively, the Commonwealth can voluntarily make 'ex gratia' payments or payments 'in lieu of' the amount the States would have received if they were able to impose land taxes.

The Commonwealth has large landholdings in most States, but especially in the Australian Capital Territory. Exemption of government land does not reflect the true costs of holding this land in its current form, and may encourage inefficient land use. Better land use decisions are made when all costs are taken into consideration.

There is also the issue of land held by foreign governments and land held by foreign investors. The Longley report recommended that land owners not resident in Australia should pay land tax at the full marginal rate and not be eligible for exemptions available to Australian residents. The New South Wales Government rejected this recommendation on the grounds that it:

Would discourage foreign direct investment and have discriminatory impact on local tenants of foreign owned properties (Longley 1990, p. viii).

On the separate issue of land owned by foreign governments (for example embassy lands in Canberra and consulate lands in State capital cities) the Commission sees no reason why they should be treated any differently from Australian landholders. The Commission recognises that there may be reciprocal tax arrangements between Australia and foreign governments. Nevertheless, if the Commonwealth enters into such arrangements with foreign governments, it is

difficult to see why the States should bear the cost. The Australian Capital Territory Government is reviewing the land tax liability of foreign governments which are currently exempt from land tax.

Land used for primary production

Most land used for primary production is exempt from land tax. Where land tax is payable, a number of exemptions and concession provisions may apply in some States.

Exemptions for land used for rural purposes have the potential to cause particular problems at the urban fringe, where landholders may have reduced incentives to convert the land to a (taxable) urban use. At present, however, such impacts are moderated by the exemption also given for much of the owner-occupied housing stock.

The New South Wales tax task force recommended that the present automatic exemption of primary production land from land tax be removed and replaced with an exemption for farms owned and operated by families in individual, family company or trust names with a basic exemption from tax of land with an unimproved capital value of \$1 million (Collins 1988, p. 251). The New South Wales Government (1990) rejected this recommendation on the basis that it would place an unfair burden on country people. The Government said:

It is believed the need to maintain the export competitiveness of the produce from New South Wales farms rules out such a tax move which would only act to disadvantage New South Wales farmers (p. 462).

In Victoria, the Fordham review recommended that the Government should consider expanding land tax to a limited number of rural landholdings above an unimproved value of around \$2 million. It added that the introduction of any such measure should be delayed until there has been a significant improvement in economic prospects facing Victoria's prime agricultural industries.

The South Australian land tax review found that:

While the existence of a land tax will not distort the overall level of land usage, it is some times argued that it may influence the type of land usage by discriminating against activities that require large amounts of land as an input to production. Rural production clearly fits this category (Hill 1990, p. 69).

The review found that blanket exemptions of the kind that currently apply to land used for primary production result in inequities between rural production and other income generating activities (whether retail, commercial or industrial). However, the review considered that while total exemption was not justified there were some grounds on which the use of either differential exemption levels or differential tax rates for primary production land may be justified. They

included the relatively small margins earned on large investments in rural land and the susceptibility of those margins to adverse seasonal conditions and fluctuations in international commodity prices which may affect primary producers' capacity to pay land tax (Hill 1990, pp. 69-70).

The Commission considers that land tax should be non-discriminatory. Exemptions and differential treatment will inevitably reduce efficiency of land use. The exemption of rural land while other uses were taxed would be likely to result in land suitable for urban settlement being withheld from urban use.

Impact of land tax

If land tax was imposed uniformly, it could be argued that it would have no effect on land use. However, with the extent of exemptions and rate variations, its net impact on land use is difficult to determine.

The most significant exemption is for owner-occupied housing. On its own, this would be likely to encourage a preference for investment in home ownership. Walsh and Thomson (1992) said:

... compared to the other alternative uses of the land, the land tax exemption on residential land makes residential land cheaper than it would otherwise be, making (new) home ownership more affordable – whether on the fringe (where land is available) or in inner areas (p. 38).

Because rural land is also exempted, however, it is not clear that land use choices at the fringe are necessarily biased between these two uses.

What does seem clear is that commercial and other employment-generating land uses and rental housing within the city are likely to be discouraged. The City of Melbourne expressed concern that:

... the significant increases in land tax (125 per cent average between 1989 and 1990) were likely to place severe strains on many businesses in the [Central Activities District]. Anecdotal evidence suggests that these increases have in fact contributed to a substantial number of business closures (Sub. 25, p. 2).

On rental housing, the DHHCS said:

The impact of land tax on rental housing can be significant. For example in an examination of the potential for inner city living in Perth it was estimated that land tax in one of the inner city locations under study would be as high as \$980 per annum per unit, contrasted with \$35-\$45 per unit for rental housing in suburban areas [Perth Inner City Housing Task force 1992] (Sub. 89, p. 39).

If residential values in general are determined by owner-occupied housing which is not subject to land tax, such effects are quite feasible.

Many participants argued that land tax be abolished. Leagh-Murray and Tait said that land tax has various distorting effects on development and investment and should in its present form be abolished. This was also advocated by Jennings Housing which said:

Land tax has not been a disincentive to the aggregation of wealth nor has it been an incentive to bringing land to its highest or best use. Rather it ... has in many circumstances had the opposite effect (Sub. 124, p. 6).

In contrast, however, the Queensland Government said:

To the extent that land tax reflects the value of land, it should (subject to factors affecting value such as zonings/other tax effects) encourage best land use. It is probably not, however, a deciding factor (Sub. 153, p. 8).

The City of Melbourne noted the highly inequitable structure of the Victorian Government's land tax and suggested that at the very least this is a matter requiring urgent review and attention by the Commonwealth and State Governments (Sub. 144, p. 1).

Under the current system of land tax, the exemptions offered to various types of landholders significantly narrow the tax base and place a greater burden on those required to pay it. The exemptions are distorting and may unduly discourage certain land uses, for example, rental housing is disadvantaged relative to owner-occupied housing.

Elimination of these exemptions would significantly expand the revenue potential from land tax and permit a reduction in the rate or in the reliance placed on other perhaps more distorting taxes. However, taxing those previously exempt might lead to reductions in housing affordability. Reductions in rural land returns could accelerate the rate at which land changes from rural to urban use.

The Commission notes that there are presently a number of smaller taxes such as metropolitan taxes, fire brigade levy and local government rates (these are discussed later) which tax the same base and can also be considered to be land taxes. **Where the revenue raised is actually for use of a specific service, then charging for use should be adopted rather than an across-the-board taxing of land.**

In principle, a tax on land, applied universally at the same rate, would have little effect on land use. However, current land tax regimes are distorting, because of the various exemptions and concessions given.

1.2 Taxation of income from housing investments

Owner-occupied housing

Under current income tax arrangements in Australia, owner-occupied housing receives privileged treatment as an asset. Capital gains on principal residence are specifically exempted from the capital gains tax, and housing services enjoyed by owner-occupiers are not taxed, even though they represent a return on owners' investments in housing assets.

Under a comprehensive income tax both these tax measures would apply to housing, as they would to other significant sources of income. As a partial offset to these concessions, deductions for mortgage interest are not permitted for individual owner-occupiers in Australia.

The broad effect of these policies is to generate a larger demand for housing than would otherwise be the case. Australian residents are encouraged by the relatively favourable treatment of owner-occupied housing to place their capital resources in housing rather than other income producing opportunities.

In principle, this additional demand for housing need not be reflected in the provision of more houses – some of the concession could conceivably be capitalised in the existing housing stock. This has implications for affordability. The higher prices that purchasers would be required to pay for the existing stock could be expected over time to favour the provision of additional housing on new land (the cost of which is not immediately affected by the tax). People may also be induced to purchase bigger land parcels. The implication is that cities are more spread out than would be the case under a tax policy which did not discriminate in favour of owner-occupied housing.

The Gosford City Council said:

There is no doubt that concession to owner-occupiers affect patterns of urban settlement. The great desire to own a house has led to the urban sprawl around Sydney. As owner-occupied homes are not subject to capital gains tax, individuals tend to undertake works to upgrade their property and increase its value. At times these concessions may hinder the best use of land and limit the density of housing in an area (Sub. 42, p. 6).

Concessions for owner-occupied housing are also seen as inequitable, in that benefits from the policy cannot be enjoyed until some equity in a house is held. Thus those who are forced to delay purchase for some time while they acquire the resources for a deposit, are disadvantaged relative to those who can quickly put some equity in a house. Some of the poorest in society would never raise the necessary equity.

Uniform taxation treatment of owner-occupied housing and other investments could be achieved by imposing taxes on owner-occupied housing, bringing the tax system as a whole closer to the income tax benchmark. Alternatively taxation of other investments could be lowered, so that disparities were reduced or removed.

Some participants argued against the notion of removing exemption for owner-occupied housing from capital gains tax. Leigh-Murray and Tait said that removing the exemption would not only reduce mobility, but it would be an 'accounting nightmare' (Sub. 127, p. 7).

However, other participants saw advantages in removing the exemption. The New South Wales Treasury accepted that the capital gains taxation treatment of the family home and the non-taxation of (net) rents attributable to owner-occupation distort the housing market, adding:

This has no doubt impacted on the level of investment and availability of capital pertaining to other sectors of the Australian economy (Sub. 150, p. 6).

In its inquiry into the *Availability of Capital* the Commission constructed an economic model, ORANI-TYCOON, to examine the impact of achieving a greater equality between taxes on owner-occupied housing and investment in other assets (IC 1991b). It considered the effect of a tax change which reduced the disparity in taxes by 10 per cent.

Under this simulation the demand for housing declined by 0.4 per cent. This is a significant change for what is a relatively small alteration in tax rates. While effects of larger changes are not necessarily strictly proportional, it suggests that a move to eliminate the disparity might lead to a decrease in the demand for housing of the order of 4 per cent. The Commission did not make recommendations on such radical changes to the taxation of income from capital as would equalise tax rates on housing and other investments. They were considered beyond the scope of the inquiry, as they are for this. It did, however, examine the possibility of extending the capital gains tax to include owner-occupied housing.

One drawback of capital gains tax is that the costs of compliance are high. Extensive records need to be kept over long periods. In the case of private (owner-occupied) housing this would include the need to record such details as modifications and improvements to dwellings over the period of ownership, as it does for investment (rental) housing. The inclusion of owner-occupied dwellings in the base would greatly extend compliance costs. This would need to be weighed against the likely beneficial impact of tax on investment behaviour.

Capital gains taxes in general discourage realisation of assets. Effective tax rates are lower the longer assets are held. If such a tax were applied to owner-occupied

housing, it could, by discouraging house sales, discourage the movement of owner-occupiers to more suitable housing as needs change. Similarly, it was noted in the report on the *Availability of Capital* that the discouragement of realisation of owner-occupied housing could generate a less mobile labour force than is currently the case (IC 1991b).

The undue encouragement to housing could also be ameliorated by reductions in the weight of taxation on other investment opportunities. If, for example, the impact of the income taxation on other investment opportunities were to be reduced, those investments would become more attractive relative to housing and beneficial results for urban form may follow. Such a reduction could be engineered through reduced expenditure demands in general by government, or through increased reliance on other tax bases.

Investment in rental housing

Rental housing is a common form of investment by people with relatively small amounts of capital. According to the NHS (1991e), individual investors holding only one or two properties account for 70 to 80 per cent of private rental landlords (p. xiii).

Owners of such assets are treated in a way that is consistent with the application of income tax to other investments. Any biases in income tax treatment are likely to be small, and little different from investments in other long-lived assets.

Rental income is taxed according to conventional income tax principles. Rent is taxed at the investor's marginal tax rate and deductions are allowed for such items as mortgage interest, repairs, depreciation, legal expenses, stamp duty, land tax and rates.

Under 'negative gearing' provisions investors subject to personal income tax on rental income may use other sources of taxable income to take full advantage of deductions arising from rental property, if rental income is insufficient.

Provision for negative gearing clearly makes rental housing investment attractive to a number of investors, but whether this constitutes a concession is less clear. It is common for businesses with a number of income sources to be able to deduct losses from one source against profits from another, and such activity could in principle include rental housing. To allow this to occur among personal investors who may also be employed would be unlikely to bias decisions greatly.

Like many investment opportunities it is the light taxation of capital gains relative to other forms in which income may accrue that leads to a relative favouring of rental housing. This can be particularly attractive when inflation is high. In the case of rental housing, however, achieved real capital gains are not as

common as is often thought – houses themselves are depreciating assets and future capital gains are often anticipated in the purchase price. **In general terms any favouring of rental housing that results from income taxation provisions is probably relatively slight.**

However, because capital gains tax is only applied to real capital gains when realised, rental housing is much more favourably treated as a form of investment than is, say, a savings deposit under which all interest is taxed at full marginal rate as it accrues, and there is no inflation adjustment permitted.

Investment in land development and redevelopment

Holders of land who do not plan to develop it themselves but are speculating on increases in values will be subject to capital gains tax on sale. Australian capital gains taxation, in common with almost all capital gains taxes in the world, encourages holders of assets to delay such sales because it is levied on realisation rather than accrual. For this reason therefore, less development at the fringe and less inner-city redevelopment might be expected than in the absence of taxation.

In addition, capital gains taxation is not imposed on those still owning assets purchased before September 1985. These taxpayers may have even less incentive to sell or redevelop since the amount realised would presumably be reinvested and any subsequent income might be taxable.

Jennings Housing said:

... the ability of pre 1985 owners to avoid the implications of capital value increases in periods since 1985 is distorting the broad acre land market. The option of quarantining only those gains made to date should be considered (Sub. 124, p. 6).

There do not appear to be major administrative obstacles to the application of capital gains tax to future gains on land assets purchased before September 1985. Landowners would need to be made subject to capital gains taxation after an announced date, with values at that date perhaps established by taxpayer valuation at the time, or retrospective valuation by the tax office at the time of eventual sale. Such a policy would reduce much of the current disincentive for redevelopment of rural and urban property. There may, however, be equity concerns raised about the taxation of capital gains on landholdings if other assets owned before 1985 remain exempt. While it would not be impossible to also make taxable some other more easily valued assets (for example, shares) this raises broader issues than can be considered in this inquiry.

1.3 Other taxes and concessions on housing and land

There are a number of smaller taxes and charges which are associated with urban settlement. Some of these taxes and charges, such as metropolitan/regional taxes and fire brigade levies, may be large enough to have some locational impact. This is difficult to assess. Other smaller taxes and charges such as the ambulance levy on owner-occupiers in Hobart, the Water Board environment levy on property owners in New South Wales and a special levy imposed on commercial properties for the underground rail loop in Victoria are not likely to have a noticeable impact on patterns of urban settlement.

A paper produced for the NHS (1991c) found that there are a range of other taxes and charges levied on housing and residential land that are relatively unimportant sources of revenue, but which can have relevant impacts (p. 22).

There are also various concessions granted to homeowners which may reduce mobility. At the draft report hearings, Mant raised the issue of the exclusion of the family home from the assets test used to determine pension eligibility. Mant said that various rebates and concessions afforded pensioners, such as excluding the family home from assets tests, and the provision of council rate rebates created a disincentive for some people to move or to trade down. (Rate rebates are discussed in section C5).

Metropolitan/regional taxes

Metropolitan/regional taxes are imposed in New South Wales, Western Australia, South Australia and Victoria. They are generally for the provision of public open space. These taxes may have an impact on urban settlement depending on who the taxes fall on and what basis is used for the rate of tax.

For example, in New South Wales the Sydney Region Development Fund is levied on metropolitan councils on the basis of their land values.² Those councils in the inner areas where land values are high may be required to pay more than those on the fringes. In 1990, \$6.6 million was collected through the levy. Similarly in Western Australia the burden of the Metropolitan Region Improvement Tax falls on commercial properties at a rate of 0.225 cents per dollar. In 1990-91 the Western Australian Metropolitan improvement tax amounted to \$16 million.

In South Australia a Metropolitan improvement rate of 0.95 cents per \$20 is imposed on the taxable value of metropolitan land in excess of \$200 000. In Victoria the metropolitan improvement rate amounted to \$44 million in 1990-91.

² The region covered by fund is larger than the immediate 'Sydney' area, and includes the Blue Mountains.

Fire Brigade Levy

In New South Wales the Fire Brigade Service is funded by insurance companies (75 per cent, collected by a levy on insurance policies), the State (12.5 per cent) and from local councils (12.5 per cent, collected within rates).

The Act requires municipalities or shires or parts thereof which comprise a fire district to contribute one eighth of the cost of maintaining that fire district. The Sydney Fire District is made up of the whole or parts of 35 municipalities and shires. In 1988 municipalities and shires contributed almost \$14 million in levies.

At the public hearings in Perth the Western Australian Municipal Association said the fire brigade was funded from contributions from the insurance industry, State and local governments, with amounts determined on a value of land basis. The Association said:

... each council basically gets a bill from the Fire Brigade Board every year for x hundred thousand dollars and has to pay it. [It is] only for areas that are serviced by permanent brigades (transcript, p. 788).

In Queensland and Tasmania, property owners make a contribution to fire brigades. In 1990-91 Queensland property owners contributed \$91 million in total to fire brigades, while Tasmanian property owners contributed \$14 million in total.

When they are levied on the basis of property values, these taxes and charges assume the nature of additional land taxes. If they are collected through local council rating systems, they take on and extend the distortions created by the structure of concessions and exemptions within those systems. As with its comments on land tax, the Commission considers that levies, taxes and charges of these kinds should, if possible, be charged to users of the services they fund. If that is not practical, the most efficient basis is that which is least distorted by exemptions and concessions.

C2 STAMP DUTY

Stamp duties are very important to State revenues. There are few exemptions and concessions, and these are provided mainly to first home buyers. Stamp duties are significant transaction costs for house purchasers. They are a disincentive to owner-occupiers changing dwellings as their needs change, as well as reducing the affordability of housing.

2.1 Introduction

For patterns of urban settlement to be efficient, it is necessary that the ability of people to change their accommodation as their needs change not be unduly hindered.

The House of Representatives (1992) report on *Patterns of Urban Settlement: Consolidating the Future?* noted the potential impact of stamp duty on peoples' mobility among dwellings and drew it to the attention of this inquiry. A number of participants also raised the issue of stamp duties and their effect on mobility. For example, the Trades and Labor Council of Western Australia said:

Stamp duty on conveyances and mortgage significantly reduce housing mobility in that the costs of moving from one house to another are significantly increased. A particular problem is that of low and middle income home purchasers with little equity who effectively become locked-in to a particular home for a considerable period of time. At the same time, high stamp duty payments make it more difficult for new home buyers to purchase houses (Sub. 50, p. 47).

If taxes and charges imposed on transactions are higher than the resource costs of transacting, then efficiency will be reduced. Some people may respond by buying larger residences than they initially require in order to be prepared for the future. Others may be deterred from moving to smaller residences when they no longer require large amounts of space, or may be encouraged to spend money on modifying existing housing instead of moving.

What is stamp duty?

Stamp duty as it affects housing is levied on any instrument used to transfer ownership of property, including mortgages. It is levied on the dwelling purchase price, mortgage sum insured or the annual rent and is paid by the purchaser.

The charges are a revenue-raising device: stamp duty is a tax, and does not relate to the cost of title transfers, which is relatively low.

Stamp duty is the largest property-based source of revenue for the States and a highly major source of revenue overall (table 1). The recent reduction in stamp duty collections in all States except Tasmania has been due to subdued property market activity. In New South Wales, a Stamp Duty Deferred Payment Scheme for first home buyers has also resulted in lower revenue.

Table 1: Stamp duty^a as a proportion of State/Territory taxes

	<u>1989-90</u>		<u>1990-91</u>		<u>1991-92</u>	
	<i>Stamp duty (\$ m)</i>	<i>As a % of total taxes</i>	<i>Stamp duty (\$ m)</i>	<i>As a % of total taxes</i>	<i>Stamp duty (\$m)</i>	<i>As a % of total taxes</i>
NSW	1403	17	1159	14	1358	15
Vic	1033	19	787	14	754	12
Qld	584	21	497	17	485	16
SA	199	15	173	11	176	11
WA	303	17	262	14	269	13
Tas	45	10	46	9	47	8
NT	23	16	14	9	18	10
ACT	55	17	46	13	60	14

a This includes stamp duty on financial transactions. Stamp duty on conveyances represented 9 per cent of total taxes, fees and fines in New South Wales in 1990-91.

Source: ABS 1993, *Taxation Revenue Australia, 1991-92*, cat. no. 5506.0.

2.2 Stamp duty rates

Rates of duty differ across States, and in each vary according to the value of the property.

In all States stamp duty rates are higher for more valuable transactions. For example, New South Wales has six categories increasing from 1.25 per cent to 5.5 per cent. A purchaser of a house selling for \$150 000 would pay \$3740 stamp duty while \$8990 would be payable on a house selling for \$300 000.

The Real Estate Institute of Victoria's 1988 analysis suggests that Victorians pay the highest stamp duty fees on property transactions in Australia. Calculations based on a house selling for \$150 000 in 1991 (table 2) show a similar result. The Department of Premier and Cabinet, Victoria, said that stamp duty liabilities were greater in Victoria than in other States because of the need for Victoria to raise additional revenue to offset the impact of fiscal equalisation (Sub. 41). This matter is further discussed in chapter C4.

Table 2: Stamp duty payable in each State on a house selling at \$150 000

<i>State</i>	<i>Duty payable (\$)</i>	<i>As % of purchase price</i>
NSW	3 740	2.5
Vic	5 200	3.5
Qld	3 975	2.6
SA	4 830	3.2
WA	3 525	2.3
Tas	2 250	1.5
NT	4 800	3.2
ACT	3 765	2.5

Note: The above figures are based on 1991 stamp duty rates from CCH 1992.

Because property values differ by State, however, the figures in table 2 do not necessarily reflect the relative cost of stamp duty on transactions. This impact can be measured by examination of the stamp duty payable on the median house price (table 3). Stamp duties are one of the most significant transactions costs for house purchasers.

Table 3: Stamp duty and real estate agents' commission on median house prices

<i>City</i>	<i>Median price (\$000)</i>	<i>Stamp duty</i>	<i>% of purchase price</i>	<i>Real estate agents' commission (\$)</i>
Sydney	180 400	4 804	2.6	4 708
Melbourne	137 100	4 426	3.2	3 402
Brisbane	118 400	2 948	2.5	3 410
Adelaide	108 700	3 178	3	4 618
Perth	96 000	1 800	1.9	3 750
Hobart	91 600	498	0.5	2 836
Canberra	145 500	3 607	2.5	5 365

Source: Prices Surveillance Authority, Interim Report, 1992, p. 26. Real Estate Institute of Australia, median house prices for year ended May 1992.

Other significant costs include real estate agents' fees and legal conveyancing costs. Real estate agents' fees are also shown in table 3.

The Prices Surveillance Authority recently conducted an inquiry into Real Estate Agents' fees relating to residential property transactions. It found that agents' fees make up between a third to a half of the total transaction costs incurred in buying and selling a home (PSA 1992).

Similarly the Trade Practices Commission is undertaking an inquiry into the restrictive practices and rules in the legal profession. The study will, among other things, assess practices and charges set by the legal profession for conveyancing. The final report is due mid-1993.

Exemptions and concessions

Exemptions and concessions are primarily directed towards new home buyers, often without regard to their means. For example, New South Wales offers first home purchasers the ability to defer stamp duty or opt for an up-front discount, while South Australia offers exemption to first home buyers if the purchase price does not exceed \$80 000 and a concessional rate up to \$130 000. Western Australia and Tasmania provide concessions for first homes valued at less than a threshold value. In the Northern Territory first home buyers are exempt from stamp duty. Queensland provides concessional rates for acquisitions of principal place of residence and vacant land on which residence is to be built (Sub. 153, p. 7).

Some concessions also apply to pensioners, and to principal place of residence, whether or not a first home. For example, all purchasers of a principal place of residence in Western Australia are eligible for a concessional rate if the home is valued at less than \$85 000.

Valuation

The stamp duty payable will vary according to whether the purchaser buys a house and land package, or purchases land and subsequently builds a house on that land. In the first case, stamp duty is payable on the total purchase price. In the second, it is only the land which is dutiable.

A South Australian study by Woodhead (1991) noted that this option is not generally available to purchasers of strata titled units:

... under current legislation the purchaser of a house/land package pays stamp duty on both the land and the house, whether or not it is individually (or Torrens) titled or strata titled. Because strata titled units can only be purchased as completed units the cost of stamp duty on this form of dwelling is unavoidable. Medium density housing of this form would be encouraged by the elimination of stamp duty on the dwelling component of strata title units. On a value of \$100 000 with a land component of \$35 000 the saving to a purchaser of stamp duty would be in the order of \$2200 (p. 26).

The Australian Capital Territory Government said:

Stamp duty is levied on the cost of purchasing a block of land, but not on the cost of building on that block. Consequently, the effective stamp duty for home builders, both in greenfields and in consolidation locations, is lower than for the transfer of equivalent value house and land packages (Sub. 63, p. 36).

In this way the effective rate of stamp duty on purchases of vacant lots for the purposes of subsequent residential development is relatively low because the duty applies only to the value of the land. This is potentially an important concession because the construction of new dwellings is one way in which urban form can be significantly altered.

2.3 Effects of stamp duty

Stamp duties affect people when they change residence. They can discourage mobility in general but, most significantly for this inquiry, they can discourage people from changing to different accommodation within the city when their circumstances change, and may therefore encourage the modification of their existing accommodation to suit changed needs. The Australian Capital Territory Government said:

The cost of the transfer of property can act as a disincentive to sale or purchase, therefore introducing rigidity, locking people into inappropriate accommodation, and generally reducing mobility from the family home to smaller units in consolidation areas as the family life cycle progresses (Sub. 63, p. 36).

Some caution is needed when discussing the ‘appropriateness’ or otherwise of housing accommodation. It may be that housing which appears at first glance to be unsuitable because of its size relative to the number of occupants may in fact be quite suitable from the viewpoint of the occupants. Elderly parents, for example, may gain considerable satisfaction from continuing to reside in the family home after children have left (and may need space to accommodate their visiting families). Many will welcome the additional space that becomes available to them, they may prefer to remain in familiar surroundings rather than move to smaller accommodation elsewhere, and this preference will not be influenced by whether stamp duties are payable on dwelling purchases or not.

Nevertheless, the knowledge that significant stamp duties will apply to the purchase of any dwelling subsequent to the first home will have an effect on some people when they are contemplating purchase. For example, young people may make provision for the possibility of increased family size in their choice of first home, rather than plan to change to a larger dwelling as their need for space increases. Those already in homes may choose to make do with the space that they have when they eventually have children, or make additions or

modifications to an existing residence rather than move. Older people may occupy space that they might otherwise be prepared to relinquish, or they may choose to adapt it to new uses.

A lack of mobility may produce greater demands for space overall, however, if people feel the need to prepare for unpredictable future events. Such possibilities include additional children, the care of aging parents and so on. Concessions for first home buyers (and for investment in owner-occupied housing generally) will tend to make them purchase dwellings as large as they can afford. They may also tend to make demands for space from all sections of society more uniform.

In these ways, unnecessary barriers to mobility will affect the pattern of demand for land and housing. Moreover, they may lead to greater investment in home alterations and extensions, rather than to purchases of new or existing dwellings.

The extent to which taxes actually affect mobility is, of course, an empirical question. The Gosford City Council said:

There is no doubt that the high transfer costs associated with buying and selling property inhibit people from moving residences. Elderly residents often do not move to more suitable accommodation due to the high transfer costs, however, the recurrent cost of staying in large residences after the family has departed may eventually be more costly than the one-off transfer costs. There is no doubt that the reduction or elimination of stamp duty would assist in making individuals more mobile as their work, social and family situations change (Sub. 42, p. 6).

Other participants claimed that stamp duty liability did not affect people's decisions to buy and sell. The Adelaide Planning Review said that survey material it had produced showed that land tax, stamp duty and other State and local government charges had no effect. It said:

That was a surprise to us because we did think that transfer fees and stamp duty charges were actually restricting people changing housing at different points in their lives, but all the evidence suggests that is not the case (transcript, p. 835).

The Department of Planning and Urban Development Western Australia said that it had no evidence to suggest that stamp duty acted as a disincentive to sale or that it inhibited people from moving to larger/smaller houses as their life cycle needs changed. It said:

The effective conveyance duty rate on an average home in Western Australia, valued at \$100 000 is only 1.9% (based on the purchase price). Mortgage duty rates for homes are only a flat 0.25% (based on the amount borrowed). These costs are small compared with other costs such as real estate agents' fees (Sub. 49, p. 23).

A report by the House of Representatives (1992) said:

... there should not be unnecessary impediments to the movement of people between employment centres created by the imposition of unnecessary transaction costs, State or private (p. 134).

2.4 Conclusions

The Commission considers that stamp duty on real estate transactions is a disincentive to owner-occupiers changing dwellings as their needs change, as well as reducing the affordability of housing.

While first home buyers are generally exempt, stamp duty is a significant impost on the home buyer. The duty involved can represent several percentage points of the total purchase price; it can be very much more significant when related to the equity which purchasers have in their homes. The duty is not related to the cost of registering the transactions involved: it is a tax. Effectively it is a tax on mobility and it discourages some people from moving between different dwelling types and locations as their needs change.

The Commission favours less emphasis on the use of stamp duty. This would have some revenue implications. In this connection the Commission draws attention to the possible revenue offset that could be achieved from a broadly based tax on land.

While noting that stamp duty represents an effective tax on housing affordability and mobility, the New South Wales Treasury said that the relative magnitude of these impacts was open to debate and added that:

... current and likely future economic conditions applying in NSW effectively rule out any prospect of removing or significantly reducing the incidence of this tax (Sub. 150, pp. 5-6).

It added that restriction on the ability of the States to tax incomes has resulted in a reliance on a narrow range of taxes such as stamp duty and land tax. Consequently, stamp duty represents a very significant source of revenue in funding the provision of core State government services. (Sub. 150, p. 6)

Similarly the South Australian Government said that:

... the States are reliant on a very narrow band of taxes ... [and] it is very difficult not to target particular transactions for the raising of revenue (Sub. 161, p. 15).

The Queensland Government considered that less emphasis on stamp duty and greater emphasis on a broad based land tax has some appeal from a revenue administration perspective. It said that stamp duty on conveyances has become more complex and there could be some opportunities for greater administrative efficiencies if a land tax were to be collected on behalf of the State by local

authorities. However, it added that there is a need to consider the impact of any such change on individuals and, unless there was a complete restructuring of the existing land tax base, existing rates would need to be increased. To obtain more revenue from this source would also involve taxing those whose landholdings are currently exempt or below the threshold (Sub. 153, p. 6).

C3 TAXATION AND INVESTMENT IN INFRASTRUCTURE

Allowances for depreciation and withholding tax are said to discourage the private provision of public infrastructure. The chapter notes recent government measures to encourage private investment in infrastructure. It concludes that, if – given the current environment of lower inflation – deductions for depreciation were to be made to match economic lives more closely, there could be scope for reducing the purview of section 51AD and division 16D of the Income Tax Assessment Act. In the meantime, the criteria for applying these provisions in practice should be reviewed, as they are the source of some uncertainty.

Private provision of infrastructure is increasing. Examples include provision of roads (F4 tollway), hydraulic infrastructure (Rouse Hill development), power stations (Loy Yang B) and urban transport (Sydney monorail).

Potentially, this trend could have a marked influence on the development of cities. Private providers seeking commercial returns on investments are likely to make different decisions about project viability from public authorities. The impact of these differences could range from non-provision of some services because of lack of commercial viability, to enhanced probability of provision of other services which might have been prevented or delayed by competing calls on public authorities' budgets.

Increased emphasis on private provision has, however, focused attention on the taxation arrangements which apply. In particular, a number of participants in this inquiry have raised questions about depreciation allowances associated with physical capital. Associated with this has been a concern about the taxation of financial capital, including the question of whether withholding taxes on interest payments to foreign lenders are an impediment to capital raising.

3.1 Depreciation

The current position

Most public sector infrastructure providers have in the past been non-taxable and unable to benefit from depreciation and other deductions from taxable income. Over time, attempts have been made to find alternative financing structures for

the assets employed by infrastructure providers in order to make use of the depreciation deductions available to taxable entities.

In the 1980s the Commonwealth introduced two measures, section 51AD and division 16D (of the *Income Tax Assessment Act*) to prevent taxable entities (such as the builders of infrastructure facilities) from obtaining tax benefits related to depreciation and other costs associated with property that is controlled, or the use of which is controlled, by tax exempt bodies (such as government infrastructure service providers). These measures affect private groups building public infrastructure and subsequently leasing it to government bodies.

Section 51AD came into operation in 1982. It applies to leveraged leasing arrangements, and disallows deductions attributable to ownership of property where:

- acquisition of property by a taxable entity is financed wholly or predominantly by non-recourse debt (a form of debt arrangement under which, in the event of the borrower's default, the credit provider's recourse is restricted to rights against the property – (see Treasury 1992, p. 38); and
- the property is leased to another person, or is used to provide goods or services and another person has effective control over that use; and
- the lessee or end-user:
 - is a non-resident which uses the property wholly or principally outside Australia;
 - uses the property other than solely for the purpose of producing assessable income (for example, is a tax exempt body); or
 - was the owner of the property before it was acquired by the new owner under a sale and lease-back arrangement (CCH 1992, pp. 532-3).

In such cases, the property will be deemed not to be used or held by the owner for the purpose of producing assessable income or in carrying on business for that purpose. Taxation deductions generally available to owners of property will, therefore, be disallowed.

Division 16D was introduced in 1984, and applies to non-leveraged finance leases. A finance lease involves the transfer of all, or substantially all, the risks and benefits of ownership of leased property from the lessor to the lessee (Treasury 1992, p. 39). The lessor essentially provides finance for the acquisition of the asset, and retains the rights to repayment of interest and capital, whether or not the asset turns out to be a profitable investment.

Division 16D applies where property is used by a tax-exempt government body, or is used outside Australia to produce income which is wholly or partly tax-exempt (CCH 1992, p. 533).

Participants' views

Some participants argued that section 51AD and division 16D unduly discourage private provision of public infrastructure. The UDIA said:

The present taxation system discriminates against private development of infrastructure and creates an uneven playing field for public vs private infrastructure developments (Sub. 74, p. 19).

It went on to say:

The result of the application of section 51AD is that the lessor obtains no deduction of the leased property or deductions for interest in the funding of the property because the proposed property is deemed not to be used for the purpose of producing income. This is harsh and acts as a disincentive to private sector involvement in joint infrastructure projects where the lessee is a tax exempt body ... Division 16D ... discourages investment in infrastructure projects because it: denies tax deductions for depreciation and building allowances on property and equipment; and recasts lease payments into principal and interest components (p. 21).

A report by the NHS (1991d) found that:

The most logical alternative to the traditional practice of funding the capital cost of infrastructure from public sector borrowings has been to seek investment from the private sector ... However, private sector participation in the provision of headworks and trunk mains has been hampered by ... Division 16D and Sub-section 51AD ... which limit the deductibility of costs in joint private and public sector activities. The effect of these provisions has been to severely limit the extent to which private equity funding can be directed towards large-scale infrastructure projects which are not fully private (p. 64).

What is the impact of these provisions?

One basis for assessing the impact of taxation arrangements is to consider what would happen in the absence of taxation and to compare it with current outcomes.

In the absence of taxation, public infrastructure providers would find their position unchanged, because they are currently exempt. Private providers would be advantaged because they would be relieved of taxation on incomings in the form of lease payments and would continue to obtain no taxation advantage from deductions for depreciation.

Current taxation policy therefore, unambiguously provides reduced incentives for private provision relative to public provision. As the Department of State Development, New South Wales, says:

Many of Australia's infrastructure projects involve considerable expenditure on civil works and assets which attract either limited or no depreciation allowance in the private sector. However, any revenue generated by the operation of these facilities is immediately assessable. Given the lead times necessary to complete construction and generate revenue streams, this imposes an enormous up-front capital cost on private projects (Sub. 70, p. 3).

In practice, entrepreneurs usually seek advice on the applicability of these provisions in advance of proceeding with particular projects. When depreciation is not allowed for private provision, the cost of the private project would usually be so high that untaxed public providers would find self-provision (using borrowing) advantageous compared with leasing. Under self-provision, the notional return that they would be required to earn on their investment would be the rate of interest plus depreciation, whereas the leasing cost would need to cover these elements plus the taxation borne by the private provider on incoming lease payments. Because private projects for which deductions have been denied are so unattractive, it is rare to find one in operation.

Policy options

If depreciation allowances available to private sector firms exactly matched the loss in economic value of the asset, and there were no other distortions in the income tax, then public sector providers of infrastructure would be broadly indifferent between borrowing to acquire assets and purchasing the services of the asset from a private sector firm. In both cases public sector providers would need to provide annually for an interest charge and for depreciation (plus any costs associated with physical management of the asset).

It appears to follow from this that taxation of incomings together with allowance of deductions should be permitted for private sector firms supplying assets to the public sector.

However, complications arise because the assumption that allowed deductions match true loss of value of assets is not one that holds in practice. Allowed asset lives often do not match true lives and inflation can cause biases in a number of taxation components.

This can bias decisions, especially about asset choice, in the private sector. However, decisions of the untaxed sector are not biased in this way by the tax system because no taxation applies. Provided investment decisions in the untaxed sector follow commercial criteria, however, there is some case for attempting to ensure that investment decisions are made as far as possible within that sector. This process would be encouraged by the disallowance of depreciation for private suppliers of infrastructure to the public sector.

On the other hand, there is room to question the extent to which investment policies of infrastructure providers have in the past been guided by economically efficient investment criteria. Indeed some of this questioning is the very reason that many have sought to have investment decisions made to a greater extent in the private sector.

One possible solution to this problem is to allow deductions for depreciation where the decision to provide is unambiguously made in the private sector. This would involve the allowance of deductions in cases where the asset purchase decision is made by the private provider and where the financial risks of the asset losing its value are borne by that provider. This is what currently occurs under operating leases. And operating leases are not currently affected by section 51AD or division 16D.

With leveraged and finance leases, however, the investment decision is essentially made by the public sector operator. Risks associated with the asset are largely borne in that sector and the role of the lessor is essentially as a finance provider. Here there is a danger of getting the worst of both worlds by allowing depreciation deductions – investment decisions are made in the public sector, but with a tax-financed reduction in the cost of capital.

These problems would not arise if the income tax were itself neutral. Impediments to neutrality include the fact that allowed asset lives do not match true lives under accelerated depreciation and that inflation distorts asset and debt accounting for taxation. **The Commission considers that if, in the lower inflationary environment that now prevails, deductions for depreciation were to be made to match economic lives more closely, there could be scope for reducing the purview of section 51AD and division 16D.**

At the draft report hearings, Allan argued that the absence of guidelines to assist private infrastructure providers in determining whether section 51AD and division 16D apply to a proposed project, created an impediment to planning for infrastructure provision.

In a joint response, the Commonwealth Treasury and Australian Taxation Office advised the Commission that division 16D contains a set of tests designed to determine whether ownership risks and benefits are being transferred under a lease arrangement. In addition five Taxation Determinations relating to the application of division 16D and section 51AD were issued in 1992. The Commissioner of Taxation has also issued public ruling IT 2632 to clarify the meaning of the term ‘public authority’ and IT 2602 (in 1990) which sets out guidelines for the determination of when there is effective control of a power station by a tax exempt authority. The Commissioner also provides advance opinions and individual rulings in relation to specific arrangements (Sub. 160, p. 2).

The Treasury and Tax office added that:

In determining whether there is control of a property by a tax exempt entity, the Commissioner of Taxation must consider the facts of each case. This will often require detailed examination of complex financial arrangements (Sub. 160, p. 2).

It would seem therefore that some guidance is given to private providers of public infrastructure on the applicability of section 51AD and division 16D. Apart from the public rulings and taxation determinations the Australian Taxation Office, in an effort to facilitate and encourage private sector investment in infrastructure, is to introduce streamlined processes for early private rulings on private investment in public infrastructure projects. These are to clarify whether or not the private investment arrangements would be adversely affected by section 51AD and division 16D (Keating 1992).

However, Allan's presentation to the Commission's draft report hearings would seem to suggest that there is still perceived to be a wide area of uncertainty as to the application of section 51AD and division 16D. **The Commission considers that this issue should be reviewed with the view to providing more clear and broadly applicable guidelines.**

3.2 Other infrastructure measures

The Commonwealth Government in its *One Nation* statement announced some taxation incentives to encourage the private sector to participate in the provision of public infrastructure. It announced that income-producing structural improvements would be eligible for write-off allowances at a rate of 2.5 per cent per year. This was introduced in response to concerns that existing taxation law inappropriately denied deductions for depreciation to certain assets which were considered for tax purposes to be structural improvements rather than plant (Keating 1992).

The Government also announced that it would provide:

- substantial acceleration of depreciation deductions for plant and equipment for tax purposes (in order to encourage such investment relative to alternatives, including foreign investment by Australian companies). This will be focused particularly on assets with long effective lives;
- accelerated write-offs for certain income producing buildings; and
- as a supplement to the depreciation changes, a development allowance (for a limited period), for certain larger scale investments. The allowance will only be available on the plant and equipment component of the investment. To be eligible projects will have to meet certain criteria. The allowance will

be at a rate of 10 per cent (allowed when plant is first used or installed ready for use) (Keating 1992).

In response to these announced changes, the Department of State Development, New South Wales, said that:

... [they] should provide some improvement. Projects such as hospitals, water treatment works and power generation facilities would benefit from the accelerated depreciation allowances because of their high plant and equipment content. Large projects (\$50m and over) of this type could also attract the 10 per cent development allowance. However, the proposed 2.5% pa write-off for structural improvements is unlikely to apply to relatively permanent capital expenditures such as tunnels, embankments etc. (Sub. 70, pp. 3-4).

The *One Nation* statement also announced that the taxation law will be amended to provide the facility for non-assessable/non-deductible bonds to be issued to finance certain new transport and electricity projects.

To qualify, the bonds would have to be issued by incorporated companies subject to Commonwealth income tax and will be confined to borrowings wholly undertaken for the purpose of financing the acquisition, or construction, of new land transport infrastructure or public electricity generating projects in Australia. Finally to be eligible it would have to be the intention that the project would be owned, operated and used by the issuing company for the purpose of producing assessable income for a period of not less than 30 years. Eligible bonds are to have a maximum term of 10 years. Interest on eligible bonds will neither be deductible to the issuer nor assessable to the lender (Keating 1992).

The Australian Federation of Construction Contractors said:

The success of [non-assessable/non-deductible bonds] in attracting private investors may depend upon the granting of some form of government guarantee. Perversely, the relevant project may not want a government guarantee if it is likely to invoke the application of section 51AD and Division 16D which makes the project non-viable and ineligible to bond issues anyway (Sub. 53, p. 12).

The Department of State Development, New South Wales, said:

... the tax-preferred bonds proposal to encourage private infrastructure investment may have only limited scope because of restrictive conditions ... Because of these constraints, many public infrastructure projects with normal risk exposure that could attract private investment would not be accommodated by the proposed bond scheme (Sub. 70, p. 4).

The Australian Council for Infrastructure Development said that the infrastructure bonds are less generous and useful to sponsors of projects than they appear. It added that a number of modifications should be made to make the non-assessable/non-deductible bonds more attractive to investors. It suggested that the requirement that the project sponsor intend to own and operate the infrastructure project for 25 years be reduced to 15 years; that the eligible projects be widened beyond land transport and electricity generation; that the income of the bonds be

assessable but with a tax credit equal to 39 cents in the dollar (to make them more attractive to superannuation fund investors); and finally, that the maximum term of the bonds be extended to 15 years (Sub. 112, pp. 2-3).

Some of the concessions and incentives recently introduced for private sector infrastructure projects have as their objective, the encouragement of so-called 'deferred income' projects. Those projects make taxation losses early in their lives and are often thought to be discouraged by the tax system when investors experience difficulty claiming the losses. The Commission's report on the *Availability of Capital* considered the tax treatment of deferred income projects and argued that it was not clear that penalties imposed by the tax system were as severe as is often thought (IC 1991b). On those grounds, there must be a possibility that some of the recently-announced concessions actually provide excessive encouragement to infrastructure projects, and perhaps, consequently, encourage the outward spread of cities.

In the 1992 Budget the Commonwealth Government (1992a) announced that limited partnerships established on or after 19 August 1992 are to be treated as companies for tax purposes. Limited partnerships established before this date will be taxed as companies from 1995-96. The Government said:

This will eliminate the tax advantages which limited partnerships have over companies, particularly as regards passing of losses through directly to investors and the ability of investors, including non-residents to receive tax-free distributions (p. 4.8).

The Australian Council for Infrastructure Development said it considered that these changes:

... are ill conceived and have resulted in access to a significant source of funding for infrastructure development being cut off (Sub. 112, p. 4).

However, it did not identify any basis on which the tax advantages in question could be justified in continuing to favour one form of business organisation over others.

Interest withholding tax

Withholding tax is levied on interest paid to foreign lenders. When the lender is a resident of a country with which Australia has a double tax treaty, the tax is levied at a rate of ten per cent. Australia has a double tax treaty with each of the countries which is a major source of its foreign capital inflow.

Some widely held securities are exempt from taxation and it is difficult to determine the proportion of interest paid on foreign debt which actually bears withholding tax. In 1989-90, revenue from interest withholding tax was \$797 million or about 6 per cent of total interest payments on foreign investment.

Given the prevailing tax rate of 10 percent, it appears from this that a considerable proportion of interest paid abroad did bear taxation.

At the hearings for the New South Wales Public Accounts Committee's *Inquiry into the Financing of Infrastructure* (1992), the Commonwealth Bank representative put forward the view that interest withholding tax was an impediment to access to capital for infrastructure provision:

If significant expenditures are foreshadowed on public infrastructure which is going to be financed through the private sector, we will need to ensure that an efficient capital market is created to attract foreign long-term debt capital. In what is bound to become an increasingly competitive environment for international capital, the removal of the withholding tax impost will increase the availability of foreign capital to help meet Australia's infrastructure financing needs.

The effect of interest withholding tax depends crucially on the role of double taxation treaties. Each country with which Australia has a treaty offers a credit for Australian withholding tax against its own taxation of the interest receipts. (Australia does the same for interest receipts from its lending abroad.)

However, in some circumstances credits given in the home country of the lender may not be fully effective. These include situations in which:

- the lending country has a system of company taxation under which credits given to a lending company are recovered, or partly recovered, through income taxation of the shareholders of the company (foreign tax credits are 'washed out' through an imputation or similar system); and
- foreign lenders do not have sufficient tax liability at home to offset all of the tax credited (this may be true particularly of financial intermediaries for which taxable income is only a small portion of the total interest received).

One measure of the impact of withholding tax is the extent to which interest rates differ from those abroad after allowing for any expected changes in exchange rates. Minimal difference is consistent with minimal impact of withholding tax.

An indication of differences in real interest rates is given by the deviation between observed foreign exchange cover and measured interest rate differentials. For Australia, these differences are minor (IC 1991b, fig. 2.4), suggesting that interest withholding tax has little impact. It is possible therefore that withholding tax is not an impediment to capital raising, but serves a useful function in raising revenue, in effect from foreign treasuries.

C4 FISCAL EQUALISATION AND THE GRANTS COMMISSIONS

The preceding chapters on tax issues and urban settlement need to be placed more generally in the context of federal fiscal arrangements. While fiscal equalisation among and within the States may be viewed as subsidising high cost locations, it is not clear what influence it has had within cities, given the magnitude of the funding and the many other influences at work.

4.1 Introduction

There are significant differences among the three spheres of government in their ability to fund their own programs from their own sources of revenue. This 'vertical fiscal imbalance' arises because the Commonwealth dominates revenue raising, accounting for around 70 per cent of public sector revenue, but is responsible for only half of public sector outlays.

As a result, State and local governments are highly dependent on financial assistance from the Commonwealth to fund their outlays. About half of this assistance comes in the form of 'tied' specific purposes grants; the rest comprises untied funds to supplement general revenues. The per capita distribution of these general purpose grants is uneven, as its explicit objective is to give each State the capacity to provide an average level of services without needing to levy above average taxes and charges.

Recommendations by the Commonwealth Grants Commission (CGC) determine how the total pool of Commonwealth funds for general financial assistance to the States is shared among the States:

This is done with a view to compensating States for relative revenue and expenditure disabilities that affect their capacity to provide an average level and range of public services – so-called horizontal fiscal equalisation (Commonwealth Government 1992b, p. 16).

Within States, Local Government Grants Commissions use similar criteria to determine the relative shares provided to local governments in their States.

4.2 The principle of fiscal equalisation

The CGC said that:

Fiscal equalisation involves transfers between States which are designed to even out the effects of differential capacities to raise revenues from their own sources, as well as differential costs encountered in delivering services to their inhabitants (Sub. 149, p. 2).

Under the principle of fiscal equalisation:

... each State is entitled to receive a level of general revenue funding from the Commonwealth which would enable it to provide, without having to impose taxes and charges at levels appreciably higher than the levels imposed by the other States, government services at standards that are not appreciably different from the standards provided by the other States (CGC 1990, p. 3).

Fiscal equalisation is based upon an Australia-wide standard of fiscal capacity relative to needs, and the standards are based upon the average of actual policies adopted by the States. The CGC derives an estimate of each State's relative need for assistance to match revenue sources with expenditure responsibilities.

In effect, the CGC increases the per capita grant entitlements of those States which are fiscally disadvantaged – either because their ability to raise their own revenues is lower than average, or because they have greater than average cost disabilities in providing some services – by reducing the grants payable to the more fiscally advantaged States.

On the *revenue* side, the CGC assesses revenue-raising capacity for uniform levels of revenue-raising effort. It provides more to States with lower-than-average per capita revenue-raising capacity, and less to those who can raise more because of more favourable circumstances. For example, a State with a relatively low ability to raise payroll tax is compensated by the application of a disability factor.³ Such assessments are made for each of 30 separate revenue sources.

On the *expenditure* side, the CGC assesses the level of expenditure a State would need to incur to provide a standard level of service. It assesses disability factors to take account of:

- differences in the number of units of service which need to be provided; and
- any unavoidable differences in the unit cost of services (CGC 1990, pp. 3-4).

³ In 1989-90 the standard per capita receipt from payroll tax was \$315.68. For Tasmania, this implied a standard revenue raising capacity of \$140million (population*\$315.68). However the payroll tax in Tasmania was assessed at 78 per cent per capita of the standard. Hence the standardised revenue raising capacity was assessed at \$315.68*0.78=\$246 per capita or \$112million. Interestingly, Tasmania raised \$133 million from payroll tax in 1989-90, presumably reflecting the Tasmanian Government's policy of taxing payrolls at a rate higher than the standard (Walsh and Thomson 1992, p. 50).

These will be affected by such characteristics as the dispersion of the population or a demographic pattern which involves greater spending on schools or hospitals.⁴ The CGC provides assessments of differential expenditure needs for over 60 recurrent expenditure categories.

Policy-induced costs are excluded

The stated principle of fiscal equalisation calls for equalisation of the capacity to provide standard services, not the equalisation of outcomes:

Should a ... government *choose* to ... spend more (or less) on a particular budget line than the standard, then that is a policy decision of the ... government itself (Walsh and Thomson 1992, p. 54).

The Queensland Government said that, because fiscal equalisation is concerned with capacity equalisation, it:

... does not constrain a State in the way in which it organises its budget. In other words, each State is free to make its own policy choices about the way it raises its own revenues, delivers services and the extent to which it incurs debt (Sub. 153, p. 8).

Thus, higher costs arising from deliberate policy choice, rather than the underlying costs of standard services, are not compensated for. For example, in its assessment of Victoria's transport expenditure needs, the CGC decided that the higher cost of operating two-person crews on Victoria's Z and W class trams were a matter of State policy rather than a design necessity, and expenditure needs were reduced accordingly (Victorian Government 1992a, p. 31).

Similarly, the CGC calculates recurrent expenditures for secondary education on the assumption that 20 per cent of the difference between actual and standard enrolments in States for years eleven and twelve are the result of government policy: consequently, only 80 per cent of the difference in States' costs associated with this group are allowed for in the assessment. (Victoria argues that there is no justification for this, noting also that retention rates have recently risen because of the state of the labour market.)

The CGC takes account of the receipt of specific purpose grants in determining general purpose grants. Where some of the standardised expenditure needs of a State (for example, for schooling) are met from specific purpose grants, the fiscal equalisation requirement for that State for schooling costs is reduced accordingly.

⁴ For example, a State with a higher proportion of primary school children may be accorded a disability factor (say, 10 per cent more if it has 10 per cent more primary school children), and if those children are relatively more dispersed than in other States, a further disability factor, reflecting an assessment of the higher costs this entails, will apply.

Fiscal equalisation is an equity-driven process

Fiscal equalisation is intended explicitly to alter the capacity of governments to provide particular services. It is designed to favour States with high costs and/or low revenue-raising capacity at the expense of States with lower costs and/or better revenue-raising capacity.

However, financial assistance grants are not tied grants – their use is a matter for the State government concerned: each State remains free to determine its own fiscal policies (CGC 1990, p. 3).

For example, a State which is compensated because it faces above-average costs in providing a standard education package is not required to spend the additional funds on education, or on finding ways to deliver education services more cheaply. The equalisation process simply allocates available funds on a basis which – if the total funds were adequate – would enable the State to provide a standard level of education if it so decides. The assessments are made on the basis of standard levels of service quality: the amount and quality of services provided are matters left to State governments to determine.

Australia appears to have the most comprehensive fiscal capacity equalisation procedure among federal systems, the redistribution of funds being greater than for many other federal or unitary systems (Walsh and Thomson 1992, p. 73).

4.3 Potential effects on location

Urban settlement patterns partly reflect the decisions made by individual firms and households and the labour and capital that accompany them. Choice of location for these mobile factors may be influenced by the level of taxes and charges they face, and by the quality of services they receive from government. They may also be influenced by differences in treatment among the States.

Fiscal equalisation, with its effect upon the ability of State governments to provide services, must have some effects on the attractiveness of particular areas to households and firms, and therefore must have some effects on the allocation of resources in a spatial sense. But the extent of such effects has been a matter for debate.

The Western Australian Treasury pointed out that fiscal equalisation:

... is not aimed at equalising service provision levels in high cost areas to those provided in low cost areas ... If it is standard (ie average policy practice in all States) to provide urban areas with twice the level of service as non urban areas, then fiscal equalisation will give each State the capacity to do so.

It added:

Fiscal equalisation does not aim to give Western Australia the capacity to provide Sydney standard services in the Kimberley district. Western Australia's greater needs relative to New South Wales simply reflect ... that it has more high cost remote regions than does New South Wales (Sub. 120, p. 4).

It said that without fiscal equalisation States could not provide the same level of services with the same rates of tax, and some relocation of activity towards States which offer lower taxes or better services would result (Sub. 120, p. 4).

Funding public infrastructure services in high-cost areas to the same quality standard as that provided in low-cost areas disguises the social cost of firms and individuals locating in these high-cost areas. It also means that the benefits which would have arisen if less was spent in high-cost areas and greater funding provided to low-cost areas are forgone. At its simplest, therefore, fiscal equalisation can disadvantage low-cost locations and benefit high-cost locations – whether States, regions or cities. This can obscure the relative costs of settlement in those locations and distort the basis of efficient decision-making.

The relativities recommended by the CGC and the subsequent per capita grant allocations to the States for 1992 are listed in table 1, which shows that the per capita allocation to South Australia, for example, was \$1261, while that for Victoria was \$826. These differences will be reflected in the assistance each State government is able to provide to service the principal metropolitan areas by way of, for example, State-funded infrastructure (notwithstanding that the per capita allocations relate to general revenue grants only and have no direct bearing on the ability of a State to fund capital outlays).

Some States receive funding that they would not otherwise receive if general assistance grants were allocated on a simple per capita basis. The effects of this depend on where those States spend the additional funds, and what is forgone by the States who lose.

Table 1: **Relativities and resultant distribution of general revenue grants, 1991-92**

<i>State</i>	<i>Relativity factor</i>	<i>Population (m)</i>	<i>Grant per capita (\$)</i>	<i>Grant per State (\$m)</i>
NSW	1.016	5.864	839	4921.5
Vic	1.000	4.406	826	3637.6
Qld	1.336	2.939	1113	3272.5
SA	1.527	1.448	1261	1826.2
WA	1.409	1.650	1173	1935.1
Tas	1.732	0.459	1426	654.4
NT	5.980	0.158	4963	784.2

Source: CGC 1992, tables 2-1 and 3-1 and appendix G, cited in Walsh and Thomson 1992.

Some estimates have been made

The CGC noted the results of an exploratory study by the Institute of Applied Economic and Social Research which estimated the inter-regional labour flows that would follow from removing location-specific transfers and concluded that location-specific disabilities imposed net efficiency costs of \$30 million a year (Dixon 1990). Nearly all of these costs were accounted for by the Northern Territory (see table 2).

Table 2: **Total and location-specific transfers and efficiency costs, 1988-89 (\$ million)**

<i>State/Territory</i>	<i>Total transfers</i>	<i>Transfers for location-specific disabilities</i>	<i>Efficiency costs</i>
NSW	-1060	-320	0.57
Vic	-695	-330	0.78
Qld	+320	+50	0.03
SA	+225	+155	0.47
WA	+425	+30	0.02
Tas	+210	+30	0.10
NT	+575	+385	27.79
Total efficiency costs			29.76

Source: Walsh and Thomson 1992, citing Dixon 1990, tables 3 and 10.

Victoria commissioned a separate study by the National Institute of Economic and Industry Research (NIEIR), which estimated that removing location-related disability factors from the criteria for determining the distribution of funds would increase national output by \$500 million per year.

The results generated by these studies are the subject of debate. For example, the Western Australian Treasury was critical of the methodology employed by the NIEIR and disputed the assumptions relied upon. It suggested that the estimates be treated with considerable caution unless verified by other studies (Sub. 120, p. 6).

These studies estimate the net costs to the economy as a whole. The aggregate amounts transferred between the States are much larger, as shown in table 2. Indeed, about \$1.8 billion is transferred annually from New South Wales and Victoria to the smaller States over and above what would have prevailed under an 'equal per capita' distribution of the grants (see also Commonwealth Government 1992b, p. 36). About \$650 million of this is for location-specific disabilities (cost differences due to factors such as population dispersion, diseconomies of scale, isolation or physical environment).

Further studies have been commissioned by New South Wales and Victoria to examine the economic and social impacts of current arrangements, including a quantitative assessment of their effects on efficiency, economic activity and prices and incomes. However, neither will be ready before completion of this report.

The net effects of redistribution are unclear

In a paper prepared for the Commission, Walsh and Thomson said that, compared with the general revenue grants which would be payable if calculated on the shares of Commonwealth income taxes collected in each State, about \$2.4 billion is transferred annually from New South Wales and Victoria to the other States.

Because of these transfers, Victoria and New South Wales could have supplied more services, or the same services at less cost to their taxpayers, if fiscal equalisation had not operated or had been confined to an equal per capita allocation between States. The reverse would be the case in the smaller States.

Whether redistribution from the larger to the smaller States would have had a significant effect on urban populations or the national pattern of urban settlements is difficult to say. There are too many other influences at work. Judgments would need to be made about what the benchmark ought to be in the absence of fiscal equalisation – for example, the sorts of transfers which might occur under a unitary state or a customs or economic union of independent states.

This aside, the effects on the population distribution *within* States are also not clear. To some extent the locational impact of Commonwealth funds provided to local governments in each State can be observed and some limited assessments can be made of their effects on incentives to locate. However, it is more difficult to assess the locational effects of spending of Commonwealth funds provided to State governments. While the inter-State effects of revenue redistribution in total can be traced, the impact on individual cities and towns, and on particular locations within metropolitan areas, is not known.

Apart from the direct funding effects, there are other issues to consider. For example, while location decisions of households and firms will largely be influenced by private considerations:

... taxpayers moving from one jurisdiction to another lower the per-person tax price of public goods provision funded from resident-based taxes in the jurisdiction they join and raise it in the one they leave, but have no incentive to take these external effects of their decisions into account (Walsh and Thomson 1992, p. 59).

Migration from one area to another in response to, say, differences in taxes or public services may create pressure for greater public expenditure in the area moved into, and at the same time result in higher per capita taxes (to finance the fixed costs of services provision) in the jurisdiction that is left. For example, if people move from congested areas to areas where there is spare capacity in public infrastructure, then the move would have social, as well as private benefits.

Thus, whether the incentives afforded by fiscal equalisation lead to greater or less efficiency in locational terms depends upon the demand for and supply of public infrastructure in those areas to and from which households and firms are moving.

Walsh and Thomson said there is some evidence that the mix of public goods and tax rates does have an effect on how the population is distributed among government units. However these studies were undertaken in the United States, where local government has far greater responsibilities for such services as schooling, hospitals and police than in Australia.

Nevertheless, fiscal competition exists between the States at many levels. Part A of this report has noted that many Australians 'move house' each year, and some employers are also moving out into the suburbs. Thus there is scope for fiscal arrangements to influence the private decisions of mobile factors by changing the capacities of different State or local governments to provide public services at a given tax cost. A study by Grossman (1989) into the migratory patterns of aged people after the abolition of death duties in Queensland but before the other States followed suit, showed a small impact upon the settlement pattern of this group.

The final outcome will depend upon the particular circumstances among jurisdictions. For example, the congestion costs imposed by an additional resident in some parts of Melbourne or Sydney would be greater than those imposed by an additional resident in the smaller cities or regional centres. In this sense, the fiscal equalisation explicit in the CGC's recommendations may be reducing the overall costs of congestion in Australia.

Nevertheless, as part B has shown, prices faced by individual firms and households are not based sufficiently on costs, and the outcomes which would be observed under better pricing regimes are difficult to judge.

Views of the States

The States differ in their views about fiscal equalisation. Victoria and New South Wales argue that it leads to inefficiencies in resource allocation, and that they are effectively subsidising the smaller States, while the remaining States and Territories argue that some form of offset to their lower revenue bases or higher costs is required.

In a submission to this inquiry, the Victorian Government said:

Fiscal equalisation is likely to lead to higher taxes and charges in those States disadvantaged by the process. All else being equal, this is likely to promote a shift in population over time from States such as Victoria and New South Wales towards States such as Queensland.

It added that:

The effect of lower per capita receipts from the Commonwealth, coupled with much higher than average per capita Commonwealth taxation receipts from Victoria, is that Victorians effectively subsidise the provision of infrastructure and services in other States and Territories of Australia (Sub. 41, section B.1).

New South Wales and Victoria argue that the CGC takes insufficient notice of the additional recurrent costs of large cities. These can be economic (for example, congestion of communication and transport facilities) or social (reflecting, for example, the concentration of ethnic minorities in Sydney and Melbourne).

In contrast, the Northern Territory argues that it costs less in per capita terms to provide the normal range of State services in the larger States than it does in the

Territory, noting that:

... the Northern Territory lies at the far end of this cost spectrum (Northern Territory Government 1992, p. 40).

The South Australian Government argued that fiscal equalisation promotes efficient resource allocation, and disputed the view that it disadvantages low cost locations and benefits high cost locations or that it compensates for inefficient decision-making.

It said that without fiscal equalisation locational decisions would be distorted because individuals and firms would face differences in tax rates and/or available services that reflected factors other than underlying differences in costs. Tax rates would be higher in those States which had either relatively low taxable capacity or relatively higher demand for services due to different demographic profiles (such as more elderly people or school children in the population). It said that the result would be inefficient resource allocation (Sub. 161, p. 16).

The Western Australian Treasury also argued that there is an extensive body of literature which suggests that full fiscal equalisation improves efficiency relative to equal per capita grants, and provided an additional submission exploring these issues (Sub. 159).

But the reverse is also arguable: locational efficiency may be better served by *allowing* differences in costs of providing services in different areas to be reflected in differences in tax rates or in the nature and quality of services provided in practice. However, for the moment, fiscal equalisation is primarily an equity-driven process, and the implications for efficiency remain controversial (see below).

The Queensland Government said it was aware of the concerns expressed by some States about the principles of equalisation and the implications for urban settlement. It expressed the concern that, in practice, the absence of fiscal equalisation may produce economic inefficiencies such as congestion and overcrowding in large cities, but argued that there are other, more appropriate fora for the assessment of these issues (Sub. 153, p. 8).

The Brisbane City Council said:

The Federal Government requires the Financial Assistance Grants to be allocated on the basis of horizontal equalisation and effort neutrality. The general effect of these requirements is to subsidise high cost and inefficient regions at the expense of efficient low cost regions (Sub. 45, p. 24).

More broadly, the Urban Development Institute of Australia said:

There is a strong case for reforming Commonwealth/State Financial Relations. State governments are directly involved with the provision of infrastructure but do not have responsibility for raising a good deal of the funds which are spent. Currently, the States have access to a narrow tax base. Giving the States greater responsibility for raising the funds they spend (and reducing the Commonwealth's tax base) should contribute to more accountable government, making State governments more responsive to the needs of the community and hence improving the provision of publicly funded infrastructure (Sub. 18, p. 12).

The Western Australian Treasury supported this view. It said that, in comparison to the efficiency gains which would flow from reducing vertical fiscal imbalance, the issue of any efficiency costs arising from fiscal equalisation 'is a very minor area of concern' (Sub. 120, p. 9).

It also argued that, when examining the impact of Commonwealth Government activities on the States, consideration needs to be given to the full range of Commonwealth taxes and expenditures, and not just fiscal equalisation. It noted, for example, that Commonwealth 'own purpose' outlays are not spent between States in accordance with tax shares. Taking all these factors into account, it said that:

The Commonwealth extracts more revenue from this State than it returns through payments to the State Government and its own purpose outlays in Western Australia ... Western Australia's partial fiscal equalisation 'subsidy' is more than offset by the Commonwealth spending Western Australian taxes outside the State (Sub. 120, p. 2).

It cited a study by Brosio (1992) in support of this conclusion.

These matters are under review

The distribution of general purpose funds using fiscal equalisation principles continues to be controversial. Governments have agreed to review the Grants Commission's processes at the 1993 Premiers' Conference in the light of concerns about the complexity and appropriateness of the Commission's methodology, and the implications for economic efficiency. The CGC said that a Heads of Treasury working party has been asked to report to that Conference on:

... the adequacy of the current fiscal equalisation scope and methodology and the principles upon which they are based (Sub. 149, p. 4).

Alternative horizontal equalisation methods have been proposed. For example, the Victorian Government noted that equal treatment of families or individuals by the Commonwealth (as occurs broadly under the income tax and social security systems) is an alternative to equalisation by way of grants to the States. Even if not achievable, it sees this as an ideal or standard against which to

measure alternative approaches. Other possibilities it noted, were equal per capita assessment or funding on the basis of the proportion of taxation collections made, with major differences in fiscal capacity addressed by specific purpose grants.

The Western Australian Treasury argued that current arrangements are superior to these alternatives. It said that adoption of any of these options would constrain the autonomy of State governments because they would increase the proportion of 'tied' funding and may well lead to standardised provision of many State services. As a result, governments could not respond to the differing demands of their constituents, and reduced policy competition between the States would limit innovation and learning (Sub. 120, p. 7).

Walsh and Thomson noted that a grants system which allowed the States to target assistance to specified groups (such as children of primary school age) by recognising differences in needs (for example, the demographic composition of the population) would be unlikely to have the same locational inefficiencies as the current system:

Such recognition of social welfare needs, while equity based, can be expected to change over time and differs little from the 'one nation' treatment of individuals inherent in unitary governments (Walsh and Thomson 1992, p. 58).

This raises the issue of whether States which claim disabilities, and are compensated for them through CGC processes, should be required to apply the compensation to the disability: that is, to make the grants work. In the past, States have not been subject to ties of this kind, on the basis that the capacity, not the actuality of providing services at comparable standards, was the object of the CGC exercise. The Western Australian Treasury argued that capacity equalisation is 'clearly superior' to equalisation of standards, in terms of both efficiency and welfare. It added that:

State policy autonomy has significant efficiency benefits, which ... outweigh any efficiency gain which could be achieved by imposing uniform State government policies across the nation (Sub. 120, pp. 5, 7).

To the extent that disabilities which increase a State's allocation under CGC rules are endemic, they will probably be reflected in land values. But land values will also be affected by the existence of the grants themselves. Thus the extent to which fiscal equalisation changes outcomes (if at all *within* a city) is not clear, and the nature and extent of such effects will depend on the way in which the State governments spend grant funds.

The CGC noted the difficulties which can arise when governments are faced

with the need to make tradeoffs among policy objectives, and said it has:

... invited the attention of governments to the potential for conflict between efficiency and equalisation objectives in a number of reports in recent years

It said that where there is any conflict, the CGC:

... must respond ... by basing its assessments on fiscal equalisation considerations alone. It is the responsibility of governments to resolve any conflict between equalisation and efficiency by making political decisions which specify the objectives and scope of the fiscal equalisation system and the role that governments expect the [CGC] to play (Sub. 149, p. 3).

The CGC noted that the House of Representatives Standing Committee for Long Term Strategies, in its report on *Patterns of Urban Settlement: Consolidating the Future?*, had proposed a review of the costs and benefits of equalisation. The CGC said that:

Until such an inquiry is undertaken governments and the community would appear to have no readily available basis upon which they can make informed judgments about the preferred extent of any tradeoffs between equity and efficiency. This is particularly important when considering appropriate revenue-sharing arrangements in the context of the Australian system of fiscal federalism in which vertical and horizontal imbalances are more pronounced than in any other comparable federation (Sub. 149, p. 4).

The CGC suggested that, while the various reviews now underway into these matters may not settle the central question of how much equalisation there should be, they may help determine how efficiency considerations might be incorporated into CGC assessments, or the extent to which relativities generated by current CGC methodology might be discounted to reflect a preferred tradeoff between efficiency and equalisation (Sub. 149, p. 5).

4.4 Fiscal equalisation at the local government level

Commonwealth general purpose grants to local government are distributed among the States on an equal per capita basis, but within States on an equalisation basis. Each State has a Local Government Grants Commission (LGGC) which distributes Commonwealth funds to councils in accordance with the *Local Government (Financial Assistance) Act 1986*, which requires that:

... the allocation of funds for local government purposes is made, as far as practicable, on a full horizontal equalisation basis, being a basis that ensures that each local governing body in the State is able to function, by reasonable effort, at a standard not lower than the average standard of other local governing bodies in the State, and that takes account of differences in the expenditure required by those local governing bodies in performance of their functions and in the capacity of those local governing bodies to raise revenue.

This is similar to the principle of fiscal equalisation used by the CGC. There is also an over-riding requirement that no council receive less than it would have received if 30 per cent of the total funds in each State had been distributed on a per capita basis.

Revenue raising capacity is almost exclusively determined on the basis of a council's capacity to raise rates. Revenue raising disabilities or advantages that are judged to fall outside of council control are used to obtain disability factors in the manner described earlier for the CGC. Again, actual rates policies are matters for individual councils.

Expenditure items are assessed according to the collective behaviour of councils in the State. As at the State level, disability factors are based upon differences in needs (for example, from demographic characteristics of the council population) and locational factors (such as terrain, dispersion or isolation).

If a council chooses to spend more or less on parks and recreation than other councils, then it would not be compensated or penalised through the horizontal equalisation process for making that choice.

One difficulty with this is that there may be differences in the character of local government areas which call for a different emphasis on certain expenditure items in their budgets. For example, rural councils may need to spend more on road maintenance than urban councils, which in turn may need to spend relatively more on social infrastructure.

To overcome this, LGGCs sometimes categorise councils into groups for the determination of standard values. However, this can only be a partial solution. It may be that expenditure priorities in councils in established areas may differ significantly from those in fringe areas – yet they all are grouped as ‘urban metropolitan’ in setting revenue and expenditure standards. With rapidly expanding cities, the expenditure profile of the developing fringe is likely to dominate in setting the standard expenditure profile in metropolitan urban areas.

Locational consequences at the local government level

There are significant differences in the capacity of individual councils to fund their programs. This can lead to different levels of rates, or to differences in the mix of services provided and rates charged.

One question is whether differences in rates would affect a household's location decisions. More important is the prospect that some of the advantage or disadvantage of a particular location, including the basket of council services or facilities provided, will be built into the market value of the land.

Given the use of property values for the assessment of revenue raising capacity, some have questioned the efficacy of horizontal equalisation in terms of urban settlement patterns. Hamilton (1976) for example, claims that the effects are capitalised into land values, and:

... with full capitalisation there can be no horizontal inequity.

For instance, a relatively poor local government area may have relatively low revenue raising capacity – because of low average property values – but may face higher demand for some council-supplied welfare services. However, this will be reflected in lower private house prices for those who choose to move into the area: new purchasers will not be disadvantaged through purchasing in this area rather than in any other.

Tax rates, or the amount and quality of public services provided, may change over time, reflecting, for example, the number of people moving into or out of an area, and their demographic characteristics. The emigration of younger people from an inner area could leave the aged population that remains with an increased per capita share of the relatively fixed cost of local government in that area. Moreover, the character of population composition change may call for greater expenditure than was the case in the past. Both these effects could be reflected in property values.

Thus the capitalised component of rates, charges and services should be borne in mind when considering the horizontal equalisation ‘needs’ of new developments. Home buyers have available to them the information on charges and services, and the values of existing houses in a given area could be expected to reflect the values of those charges and services.

However, not all differences in rates and services are reflected in capitalisation. The rate of development of rural land in different council areas may be affected by the mix of rates and services that councils offer.

The South Australian Government argued that the lack of interstate equalisation of Commonwealth general purpose grants to local government is a ‘significant omission’ in the equalisation process (Sub. 161, p. 16). The Western Australian Treasury also considered that, subject to some qualifications, fiscal equalisation at the local government level should apply across, as well as within, States, and that this can be expected to enhance efficiency (Sub. 120, p. 8).

Some outcomes for local government

The OLG (1992) and Pensabene (1990) concluded that councils in developing metropolitan areas obtain a greater share of funding than those in established areas (cited in Walsh and Thomson 1992, p. 66). Table 3 shows that developing

councils (receiving the highest per capita grants in urban areas) have been mainly in outer metropolitan areas (category 2), while the developed councils have been in older and inner areas (category 1).

The table shows two sets of results for 1989-90. The first two columns show the actual per capita allocations by category of council, while the third and fourth columns are calculated using the distribution expected when every State LGGC has implemented fully the equalisation principles explicit in the 1986 Act. It can be seen that the allocation away from established local government areas will be increased once the equalisation requirements of the Act have been fully phased in.

While the use of land values in the revenue raising capacity assessment of LGGCs may be questioned because of:

- the capitalisation of infrastructure and other differences in land values; and
- the uniformity of the weighting given to the standard budget set of expenditures adopted by each LGGC for local government areas that may, in fact, have quite diverse characteristics;

their use only serves to reinforce the broad direction of equalising funding in favour of outer urban areas relative to inner, more developed urban areas.

Table 3: Per capita grants by category of LGA in five mainland cities 1989-90

City	<i>Per capita grant</i> (\$)		<i>Implied</i> <i>per capita grant</i> (\$)	
	Cat. 1	Cat. 2	Cat. 1	Cat. 2
Sydney	21.2	30.7	18.3	32.6
Melbourne	28.3	30.7	27.2	31.9
Brisbane	22.3	23.3	19.5	23.4
Perth	18.2	22.0	14.9	19.7
Adelaide	28.7	33.5	24.4	38.4

Note: Category 1 councils are those in 'developed metropolitan' areas which are '... wholly contained within one of the five mainland State capitals', while category 2 councils serve the fringe.

Source: Pensabene 1990, table 4.3.

4.5 Summing up

Fiscal equalisation involves large transfers between the States on the grounds of need or capacity to raise revenue. The amounts involved are large in total, but it is not clear to what extent location decisions are affected.

Fiscal equalisation may have more influence on regional or inter-urban movements than on changes within urban areas. At the inter-State level there are clearly transfers occurring: tax revenues raised in New South Wales and Victoria are partly diverted to fund the other States and Territories. These transfers have the potential to change the relative attractiveness of particular cities or States, and are likely to encourage some people to move to smaller cities like Adelaide or Darwin.

Within cities, the effects of Commonwealth-State funding arrangements are less likely to have an effect on locational decisions, but this depends upon the spending behaviour of State governments. However, Local Government Grants Commissions may influence these incentives, through the grants they make to councils. The revenue-raising capacity of councils is greater in some inner areas of cities, in part because of their access to the valuable commercial property tax base. However, the public expenditure needs in the newer, developing areas are different from those in established suburbs: whether they are greater or not depends on the circumstances of individual local council areas. The distribution of grants may offset the relative advantages and disadvantages councils face.

There is a further complication: the workings of land and asset markets at all levels mean that many disabilities or advantages reflected in government taxes are incorporated into house and land prices. This in turn influences subsequent decisions about where and what to buy or sell.

In sum, it is difficult to be confident about the net effect of fiscal equalisation. The CGC noted the widely divergent estimates produced by attempts to estimate the effects of removing location-specific disabilities from the equalisation processes, and said that:

... the net outcome of the interaction of fiscal equalisation transfers with all of the other influences which are operating simultaneously is very difficult to judge.

It said that the debate on this issue is far from resolved, but noted that:

The consensus to have emerged to date from these attempts is that the equalisation transfers *must* be having some effect on population between States and between regions within States. To the extent that these transfers result in net internal migration flows out of low cost areas into high cost locations it is inferred that the opportunity costs in terms of the benefits forgone in the low cost areas exceed the benefits achieved in the high cost areas (Sub. 149, p. 2, emphasis in the original).

The House of Representatives (1992) said:

What is clear ... is that the Commonwealth, through fiscal equalisation, encourages redistribution of the population in an ad hoc and non-strategic manner. The benefits of this policy are assumed to outweigh the costs, but no-one has measured these costs or benefits precisely (para. 3.40, p. 44).

A review of fiscal equalisation was recommended by the House of Representatives to consider, among other matters, the environmental, equity and efficiency costs of both more and less regional diversity. Such a review might also be an appropriate vehicle to deal with the issues raised in this chapter in relation to equalisation among the States and Territories and among local governments within them.

C5 LOCAL GOVERNMENT RATES

Local government rating systems have been the subject of a number of reviews in recent years. The Commission has not duplicated that work. However, following the analysis in part B, and that on fiscal equalisation as it affects local governments, this section briefly examines the role of local government in infrastructure provision and raises some issues about the financing of that infrastructure. It concludes that local governments should make greater use of specific charges and differentiated rates. Reviews of the reasons for rates exemptions and concessions, and their effects, are needed.

5.1 Introduction

Local governments are important providers of local physical and social infrastructure, although their responsibilities vary from State to State. Many are involved in local road construction and maintenance, footpaths, kerbs and channels, building and planning, street lighting and cleaning, fire protection, libraries, home and community care services and public health services.

Councils account for about one-fifth of State and local government infrastructure supplied to new urban developments. For Queensland the figure is higher because of the greater role of local government in that State – water and sewerage undertakings, for example, are operated exclusively by local authorities. In contrast, local authorities have no responsibility for water and sewerage in Victoria and South Australia, while in other States these responsibilities are shared between State government agencies and local governments.

By way of example, table 1 shows the broad categories of expenditures undertaken by councils which fall within the Sydney Statistical Division. Local roads are clearly important local government responsibilities in urban areas, and represent a significant cost to councils in areas encompassing new developments. Indeed, disputes often arise as to which roads should be classified as local roads, and therefore be council funded, rather than arterial roads, which are provided by State governments. The question of road funding was discussed in more detail in part B.

Local governments are funded by rates, fees, borrowings, user charges, developer contributions and grants from State and Commonwealth governments. As discussed earlier, the need for a mechanism to distribute grants from the Commonwealth to State and local governments arises because of vertical fiscal imbalance, whereby the Commonwealth dominates both revenue raising and

borrowings. The means by which general and special purpose grants are made to local governments were also discussed earlier.

Table 1: Expenditures by local governments in the Sydney Statistical Division, 1990

<i>Expenditure item</i>	<i>\$ million</i>	<i>%</i>
General administration	275	17.0
Public services	36	2.2
Education	4	..
Health services	32	2.0
Community services	58	3.6
Garbage services	141	8.7
Housing and community amenities	167	10.3
Library services	65	4.0
Recreation and cultural amenities	189	11.7
Roads and ancillary facilities	459	28.3
Economic services	38	2.3
Unclassified services	158	9.8
Total	1 620	100.0

Source: ABS 1992, *Local Government Expenditures from Revenues*, cat. no. 5502.1.

5.2 Income from rates

Local government rates are generally calculated as a residual after other sources of revenue have first been taken into account. Broadly, councils determine the total amount of revenue which needs to be raised from rates each year by deducting all other sources of revenue – government grants, revenue from fees and charges etc – from budgeted expenditure (Sub. 15, p. 5).

Hence, rates are not a fee for services provided, nor a charge attributable to a specific collection of services: they are a general revenue measure having no relationship to the cost of services funded by them, or to the identity of the users of those services.

In all States, property values are used to allocate the total annual rate burden across the landowners in the community. The amount which each pays in council rates is calculated as a percentage of their land value.

The relative importance of income from rates varies considerably from council to council. In general, however, it is the main source of council revenue. In Victoria, for example, rates accounted for about 45 per cent of council revenues

in 1990-91. (For New South Wales, the corresponding figure was about 42 per cent, and for Queensland it is 49 per cent.) On average, grants comprised about 20 per cent of revenue in Victoria, while fees and charges accounted for about 16 per cent. Only 3 per cent came from borrowings.

The share of rates accounted for by residential, commercial, industrial or rural land will depend on the location and mix of activities in the council area, and on council decisions about whether to apply the same or different rates in the dollar to each. To give some indication of the breakup of rate revenues, table 2 shows the proportions from each source for groups of Victorian councils.

Table 2: Victorian councils, rate revenues by property type, 1989-90 (percentage)

<i>Category of council</i>	<i>Residential</i>	<i>Commercial/ industrial</i>	<i>Rural</i>	<i>Total</i>
Melbourne city	11.9	88.1	0.0	100
Developed inner urban	64.3	35.7	0.0	100
Developed outer urban	79.0	20.0	1.0	100
Developing fringe	71.5	20.2	8.2	100
Provincial city	66.2	31.4	2.4	100
Fringe of provincial city	50.0	12.0	38.0	100
Large rural town	57.8	17.4	24.9	100
Small rural town	43.3	7.1	49.6	100
Sparse rural shire	23.6	3.7	72.7	100

Source: Liew, T.W., Johnson, D. and Municipal Association of Victoria 1991, p. 14.

Rate pegging

In New South Wales there are restrictions on the extent to which councils can increase rate revenues. This 'rate pegging' was a point of contention with some participants, who argued that it unduly disadvantaged some councils, particularly those who had kept rate increases to a minimum in the period before rate pegging was introduced and who now faced financial pressures which in other circumstances would be met by setting higher rates.

New South Wales is the only State where rate pegging restrictions apply. The Real Estate Institute of Australia (REIA) argued that rate pegging is 'an eminently sensible concept which assists in preventing distortions in land use'.

It said that:

Residential rates certainly do not reflect the cost of services provided. REIA contends that local government charges should more closely reflect the types or level of services provided. The problem in many local government councils is that the revenue raised by taxes is not applied just to recouping expenditure on infrastructure. Rate payers are forced to subsidise various activities outside the realm of local government activity, such as child minding and welfare housing (Sub. 44, p. 3).

The Gosford City Council argued against rate pegging, as it:

... has limited the services which the councils can offer as well as the infrastructure works which can be carried out.

Nevertheless it said:

... mechanisms are in place in NSW to enable Council to apply to the Minister for Local Government for an increase in rate income over the rate pegging limit if it can be justified that additional income is required and sound financial practices have been carried out (Sub. 42, p. 5).

Rate pegging appears to have had fairly arbitrary effects on councils, depending on whether or not they had implemented large rates increases in the period before pegging was introduced. It may also be that rate pegging has deterred worthwhile investments by councils for which the community would have been willing to pay higher rates than pegging permits.

The New South Wales Department of Local Government and Co-operatives argued that, as rate pegging has been in force since 1977, any impact on councils which had small rate increases before this date is no longer relevant. It added that, in any case, the Minister for Local Government has the discretion to increase the income a council may derive from general purpose rates above the pegging limit 'for worthwhile works and services relevant to the general community'. Councils are required to:

... engage an independent qualified accountant to assess proposed increases above statutory limit, make the independent assessment available to the community and call a public meeting on the proposal (Sub. 150, p. 2).

It might be argued that councils should have the scope to make their own judgments about the expenditures they undertake, and the way they raise revenues, as they are accountable to the ratepayers for their actions. On the other hand, of course, rate pegging may have prevented some councils from undertaking expensive and unpopular expenditures.

In practice, most councils increase rates to the maximum extent permissible under the rate capping arrangements; this may reflect a condition in which the cap acts as a revenue restraint, or (as it has in the past) some inflexibility in catch-up arrangements, or it may simply reflect councils' perceptions that the

increase specified in the rate capping arrangements is prima facie a reasonable one, and requires no additional justification in local terms.

The Commission believes there would be less demand from ratepayers for rate pegging if rates revenues were derived from a wider base, and only applied to works and services relevant to the general community. These matters are taken up later in this chapter.

Similarly, there would be less objection by councils to rate pegging if constraints on the fees and charges imposed for council-provided services were removed. This point is taken up in part D, where it is recommended that restrictions on charges for development approvals be removed and councils be free to set their own fees based on costs.

5.3 Different land valuation methods are used

Broadly, the main valuation bases for land are either its estimated market value if it were in an unimproved state (unimproved capital value) or the full market value of the land with all buildings and other improvements included (improved capital value). There are variations – see box 1. For example, some councils use an assessed annual rental value for the property, but this can be presumed to directly reflect improved capital value.

Box 1: The main valuation bases for levying rates

Unimproved capital value refers to the value of land if it is assumed to be in a completely natural and original state. It does not include any sort of earthworks or other site improvements made by present or past owners.

Land value or **site value** is a variation of unimproved capital value. It is the value of the land if it is assumed that improvements other than site improvements had not been made. It therefore comprises the improved value arising from such activities as grading, levelling and clearing of trees, land reclamation, retaining walls and enhancement of soil fertility

Improved capital value (or **capital improved value**) comprises the market value of the land and all buildings and other structures. It includes all improvements and capital additions to land.

Assessed annual value is the assessed rental value of the property (which is at least theoretically directly related to improved capital value). It is the gross rental value less an arbitrary allowance for expenses.

Different States and Territories use different bases for levying rates. For example, Tasmanian councils use the assessed annual value, while Brisbane City Council

uses unimproved capital values. Site value is commonly used in many parts of Australia.

There can also be differences within States. For example, until recently, Victorian councils were permitted to use either site value or nominal rental value. However, the *Local Government Act 1989* now gives councils the right to switch to improved capital value.

Different rate bases provide different incentives for land use, but the extent to which these differences influence patterns of urban settlement is not clear.

For a council to raise a given amount of rates revenue, the percentage rate levied in the dollar of property value would be higher if levied on an unimproved capital value than on an improved capital value.

Given this, under an improved capital value system vacant land would pay less than if unimproved capital values were taxed, but the amount payable would rise as improvements were made (for example, as buildings were added). Hence some building or construction may be discouraged or delayed, as improvements would become rateable once made. The holding of vacant land for speculative purposes may also be encouraged, as the rates on that land would be lower than if unimproved values were the rate base.

Some participants approved of the use of improved capital value on the grounds that higher-density residential, commercial and industrial properties are likely to make greater use of council services and therefore should pay more. This may produce a better attribution of charges as between residential and non-residential land use. However, this is an indirect response to a concern which is better addressed through differential rating or charging.

There is another point to consider. The value of land will tend to be much greater in inner or established areas than in outer areas. This means that, within a single jurisdiction, residents in inner areas provide a greater share of total rate revenues than residents in outer areas under an unimproved capital value base.

Some participants argued that they were not convinced that unimproved capital value as a basis for rating is the most desirable means of encouraging the appropriate use of land. The City of Croydon said:

In Croydon properties are rated on the basis of site value and using U.C.V. as a rates base would be difficult to administer as the cost of providing the services to the land would need to be deducted from the site value. It is not believed that U.C.V has any benefits over using the site value (Sub. 142, p. 6).

The Shire of Bacchus Marsh said:

... the use of site value provides a number of inequities in the rating base (ie. level of rates applicable to commercial developments), and there are a number of examples in recent times (eg. Town of Stawell, Shire of Melton) where councils have endeavoured to change their rating base from one of site value to a form of capital improved value to overcome these inequities (Sub. 130, p. 3).

Use of the different rates bases provides different incentives which may have an impact of the pattern of urban development. Nevertheless, the size of these effects is not clear, and may well be small. **Using unimproved capital values as a rates base has the advantage that it does not unduly discourage site development.** Improved capital value tends to target heavier users, but this is not clear. Better targeting of charging, or more finely differentiated rating and charging, would overcome this.

5.4 Differential rates and charges

A property owner's rate bill depends both on the valuation given to the rateable property and on the rate in the dollar of land value which is levied. However, councils may levy rates at different amounts in the dollar on different types or groups of properties. It is common, for example, for residential, commercial and industrial sites to be levied at different rates.

The States vary in the extent to which differential rating is practised. For example, the Brisbane City Council levies different rates for different categories of property. Single dwelling residential properties throughout the city pay the same rate in the dollar of land value, while commercial/industrial and multiple occupancy properties pay more.

In addition to general city-wide rates, the Brisbane City Council also levies rates for specific areas (or 'benefited areas') which can be identified as having benefited from Council facilities:

At the present time this applies only to Malls constructed in the central City and Fortitude Valley. Properties in the immediate vicinity pay a separate rate to cover the full cost of financing and operating the facility. The Council is currently considering providing infrastructure to facilitate the development of two regional business centres. It is expected that these would be financed by a levy based on potential gross floor area of each property benefited (Sub. 45, p. 17).

Identifying who benefits from which service is often difficult. While services provided to one property will directly benefit the owners of that property, there are also spillover benefits to properties or businesses which are located close by.

Differential rating is sometimes advocated as a means of charging more – by levying a higher rate in the dollar – to particular groups who are heavier users of council-provided services.

In its report on *Rail Transport*, the Commission noted that the provision of new railway lines had an immediate effect on land prices along the track (IC 1991f). It recommended that attempts be made to obtain contributions from the relevant local government authorities towards the costs of providing and operating such rail services. It argued that as councils benefit from the increased land values upon which rates can be levied, some contribution to the service provider was appropriate.

In such cases, the value which many people place on proximity to a railway line will be capitalised into property values. This enlarges the valuations which comprise the rate base for local councils. Whether or not this also enlarges their revenues depends upon the rate in the dollar charged on the rateable value of land from time to time. Nevertheless, the point here is that such an approach is used by councils in setting their own charges where spillover effects such as these can be identified.

In Victoria, the Government will permit councils which change to a improved capital value rating base to introduce a much wider range of differential rates. Under previous rating systems, councils could only set different rates for residential, farm and urban farm. However a change of valuation system to improved capital values can be challenged, and a poll must be held if 10 per cent of the voters in a municipality request it.

The Victorian Government said that with its new approach the rates burden may be spread more equitably:

Differential rates may ... be struck on the basis of location (e.g. urban settlement), use (e.g. specific industry such as tourism), zoning (e.g. garden industrial, heritage, old inappropriate subdivisions) or topography (e.g. flood plain) (Sub. 77, p. 3).

At the draft report hearings, Dunham expressed concern about the City Of Melbourne moving over to improved capital value as this would threaten councils' revenue base. He said:

... most municipalities around Melbourne have stuck to [net annual value] rating using just the standard ad valorem fixed rate in the dollar at this stage ... [there are] 210 municipalities in Victoria and ... at this stage there would only be half a dozen who have changed over (DR transcript, p. 374).

The Shire of Bacchus Marsh noted that an important issue is the scope to apply differential rates under systems other than just the improved capital valuation system as prescribed under the *Local Government Act 1989*, for example a net annual value system (Sub. 130, p. 4).

The New South Wales Department of Local Government and Co-operatives said that the *Local Government Bill 1992* allows councils to impose a special rate for meeting the cost of any 'works, services, facilities or activities' undertaken by the council in the council area. For example, a council could charge different rates for different kinds of works or services or alternatively, for the same work in different parts of the council area (Sub. 150, p. 1).

The Queensland Government said:

... Queensland local governments have, since 1985, had the ability to make and levy differential general rates on categories of land use considered appropriate for their areas. In recent time these powers have been extended to allow local governments to not only determine appropriate categories of land use for differential rating but to classify lands within its area into those categories of its own accord. Theoretically, these powers encompass the ability of local government to, where possible, identify and rate users of services at a level which reflects their demand for and consumption of local government resources (Sub. 153, p. 9).

However, while local governments have supported the change, there has been some resistance from the community. Questions of the rates bases aside, the Commission sees merit in the use of differential charging as a way of better targeting charges to properties and areas which benefit from particular services.

Others argue for differential rating as a way of taxing those with a greater ability to pay. However, as the Oakes and Shehadie report (1990) noted, the argument that land values reflect personal wealth is difficult to sustain, as land is only one form in which wealth can be held, and land market values take no account of the owner's debt or mortgage position.

The Australian Capital Territory Government noted that a uniform rating system does not have close relationship to the cost of providing municipal services to certain classes of properties and in certain areas, especially when the valuation does not reflect these benefits. In the Australian Capital Territory, the rates applying in 1991-92 are 1.149 per cent of unimproved value of city area land and 0.5754 per cent for rural land.

The DHHCS said:

... there is a need for much clearer guidelines to apply to any differential rating policy, including a clear nexus as to the application of revenues raised (Sub. 155, p. 19).

Local governments should be given greater scope for applying differential rates – irrespective of the rates base they use – so they may make more use of selected targeting of charges. Something akin to a benefited area concept is worth implementing further.

The discussion in part B pointed to the benefits of better linking costs and charges. The same point applies here. Differential rating and charging provides at

least some scope for targeting charges to areas, individuals or groups who use the services provided, rather than relying on generalised rates on property values to determine who funds such services. This point is developed later in this chapter.

Charges for council-provided services

In a sense, rates can be characterised as a single charge for the bundle of services provided by councils. But the charges are not, in the main, linked to the individual services provided. Nor are they levied in any direct sense on those individuals who use the services.

Moreover, the nature and extent of services which may be provided by a council – and funded from rates – is very broad. In general, councils are able to determine their own policies and services and charge ratepayers accordingly. However, the absolute or maximum levels of some fees and charges are determined by statute.

Many councils now charge developers for new infrastructure services, or where new developments place extra pressure on existing facilities. For example, in New South Wales, section 94 contributions are widely required from developers undertaking new developments within a council's boundaries. And parts of such contributions are for off-site infrastructure – for example, increased demands made on other roads within the local government area. The role of developer charges is addressed in part B.

A less dramatic example of specific charging occurs where councils set separate fees for garbage collection or for use of community facilities. But for many services, costs are met in aggregate through what is effectively a tax on land. And as noted earlier, land taxes are the dominant source of tax revenue to which local governments have direct access.

The New South Wales Department of Local Government and Co-operatives said that this issue is being considered by the New South Wales Government via proposed major reforms in the rating system. For example, these would allow councils to impose a charge for water supply, sewerage, drainage and garbage services, and to levy a special rate or charge relating to water supply (Sub. 150, p. 1).

The common rationale for levying rates, as taxes on the value of property, is that services provided by local governments are primarily of benefit to property owners. Underpinning this view is the contention that it is generally too difficult to levy on a user pays basis for roads, stormwater, street-lighting etc. The net effect is that property owners who are not otherwise exempted pay for the services enjoyed by all residents and by some non-residents.

Nevertheless, it remains the case that local government expenditures deliver different benefits to different individuals or groups, and provide services which have no real relationship to property, such as welfare services. Moreover, some non-residents also benefit from locally-funded facilities such as roads, health centres and parks. Rates are also used to finance infrastructures such as child care facilities, libraries and so on, which benefit particular groups but not others. This suggests that some ratepayers are subsidising others.

It can be argued that current rating practices bear little relationship either to the costs of provision of services by the councils or to concepts of fairness.

A report prepared for the OLG (1991) said that:

Rates appear to be most appropriate for the provision of services which benefit the property. There are problems in the limits of their applicability, particularly for the use of funding social infrastructures which governments decide are to have wider community benefits or redistributive benefits and which should not relate to the rating ability of any particular municipality (p. 28).

Local governments should be encouraged to make greater use of specific charges for services where the user can be separately identified. Charges should be set on the principle that those who generate costs, or benefit from council services, should be required to pay for them.

5.5 Rates exemptions and concessions

Irrespective of whether different rates apply to different properties or users, a wide range of exemptions and concessions applies, and this can have an important impact on revenues. It can also affect urban land use in unintended ways.

Exemptions

Many properties within a given local government area may be exempt from local government rates. The City of Melbourne noted that, in Melbourne, South Melbourne and Port Melbourne, less than 50 per cent of the municipality is rateable. It said that the impact is quite substantial. The Brisbane City Council said that:

A large number of government and religious/charitable properties are exempt from general rates. In fact, 10% of the rate base is lost to exempt properties and 40% (by land value) of the exempt properties in Queensland are within the city (Sub. 45, p. 16).

Properties which are generally exempt from rates in any council area include some Commonwealth and State properties; church lands which are used for

religious purposes; and land used by public hospitals, charities and schools, or for cemeteries and public reserves, or for diplomatic and consular missions.

A greater burden is placed on ratepayers who are not exempted. They subsidise the use of council-provided services by those who are exempt. As the City of Melbourne noted:

... exemption of State and Commonwealth properties from the payment of rates results in substantial additional cost burdens for other rate payers and contributes to the misallocation of resources in the urban areas (Sub. 75, Supplementary Report).

Several other participants made the same point. Some also observed that rating exemption can have an effect on decisions about whether to hold or develop land, given that rates can be an important component of land holding costs. For example, Newcastle City Council said that:

It could be assumed [that] the lack of rate payments by government agencies could definitely be one factor in slowing down development. There is more of an incentive for them to continue to hold the land awaiting property increases (Sub. 34, p. 1).

The Shire of Creswick said that:

At present government land owned and occupied by the Victorian State Government is exempt from the payment of municipal rates. Commonwealth Government land is also exempt, although rate payments are received from Telecom and Australia Post. Likewise, the Council is not in a position to make a charge on the Government in respect of minor construction on the adjoining roads for items such as footpaths, or kerb and channel schemes. The Victorian State Government used to make ex-gratia payment to Councils towards these minor construction works but this has been discontinued (Sub. 7, p. 2).

However, it has been suggested that if the exemption given to other levels of government were removed, local government may itself become liable for a range of taxes and charges set by other levels of government and in respect of which it is currently exempt. The New South Wales Department of Local Government and Co-operatives argued that:

There is much rate income lost to councils. However on the other hand councils are also exempt from some State taxes such as stamp duty, pay-roll tax, and land tax. There is actually a trade-off situation and in fact, some councils may well be financially disadvantaged if the status quo is altered. There is a very good argument that all commercial activities undertaken by government or its agencies should not be exempt from rates. As the current system stands, there is no incentive for government business enterprises to have financial incentives to use land more appropriately (Sub. 70, p. 8).

Nevertheless, as the Shire of Creswick noted, some government business enterprises now pay rates. Both equity and efficiency considerations suggest that those who generate costs should be charged at the appropriate level.

Concessions

Concessions to particular groups of ratepayers also impinge on council revenues, and have implications for the amounts which other ratepayers are called upon to meet. Again, subsidies from one group in the community to another are effectively involved. All other ratepayers are effectively subsidising those receiving concessions.

The nature and extent of concessions vary from council to council and from State to State. For example, Brisbane City Council provides pensioner remissions of up to 40 per cent, while in addition, the Queensland Government offers a subsidy of up to 20 per cent for some pensioners. The Queensland Government said:

The State Government allows Local Government to assess, in their own opinion what ratepayers or classes of ratepayers should receive concessions. It is considered that, as part of their elected status, the determination as to what level of general revenue should be consumed by the granting of concessions is up to each governing body.

It added:

Religious lands in Queensland have automatically been exempt in the past, but legislative proposals will allow each Local Government to look at the use of lands by religious, public and charitable bodies and determine their rateable status (Sub. 153, p. 10).

The Oakes and Shehadie report (1990) indicated that in New South Wales more than half of the total cost of rate concessions which are required by State legislation is met by the councils. It also said that the provision of concessions has become exceptionally complex with the application of rate pegging provisions.

The report noted that the cost of providing pensioner rate concessions in some local government areas is considerable, particularly in the older areas of the city. In addition, some councils claim that they process thousands of pensioner rate assessments manually, thereby adding high administrative costs to the cost of revenue forgone.

The New South Wales Department of Local Government and Co-operatives defended some concessions, arguing that:

Information about hardship incurred by persons (eg pensioners) may be difficult to accurately ascertain. Deciding hardship or disadvantage, and updating those decisions, is costly. Classifying pension recipients as persons worthy of financial relief avoids duplication of classification and reduces State expenditure on classification. (Pensioners are designated as a disadvantaged group after the Commonwealth's assessment of their incomes and assets). Rate concessions to pensioners, although not a perfect instrument in alleviating hardship, are one policy method available for doing so, and they avoid the high cost of assessing hardship (Sub. 150, p. 5).

Concessions can also result in holding of land for speculative purposes. For example, holders of land zoned urban, but in rural use, would not face the same incentives to develop or to sell as would occur were full annual rates payable. The New South Wales Department of Local Government and Co-operatives said that were rural land to be rated at urban values it could force an unwanted change of use or sale due to the owner's inability to meet rate payments. It added that:

... farmland does not use the services of urban land which are generally the reason for higher rates (Sub. 150, p. 5).

These matters should be reviewed

This inquiry is not about local government rating systems: they have been reviewed by others. The Commission's concern is with impacts on urban settlement patterns, and it has noted some of them above. However, it does seem clear that exemption of Commonwealth and other specific property from rates does have an influence on urban development.

The DHHCS said that a stronger focus should be placed on rates exemptions. It said:

Given the potential impact of these on efficient urban form the Department considers that the Industry Commission should review these matters in further detail to both clarify their impact on urban form and identify a more specific reform agenda (Sub. 155, p. 19).

However, the Commission has not reviewed these matters in detail. To do so would require detailed examination of the extent and value of exemptions and concessions which exist. Broader questions, such as what the provision of assistance to particular groups on welfare grounds by these measures implies about the level and targeting of pensions, would also need to be addressed.

Nevertheless, the Commission considers that **State and local governments should undertake a critical review of the reasons why rates exemptions or concessions are accorded to particular groups, and the effects that such policies have.**

This review should start with the presumption that all land should be rateable. In those cases where it can be shown that this would cause undue difficulties, concessions could be phased out over several years.

This might suggest, for example, that rates would be paid by public (and private) education authorities on land occupied by schools. Rates could be payable to local governments and charged in the case of public schools against the appropriate government expenditure category. In this way, a better indication of the costs of providing schools would be incorporated into education budgets.

To the extent that such changes were put into place, some changes to the current incidence of rates would occur, with current ratepayers being better off. As such changes were capitalised into land values, or incorporated into the cost structures of businesses operating in particular council areas, some reorientation of land use patterns might result.

Some of the bigger gains could be expected to arise from the discipline such an approach would impose on decisions by governments about where to locate or relocate schools and other government-provided social infrastructure. In particular, there could be some reconsideration of decisions to hold unused land, accelerating the likelihood of development or sale.

PART D

INSTITUTIONAL AND PLANNING

CONSTRAINTS

PART D: INSTITUTIONAL AND PLANNING CONSTRAINTS

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PART D: INSTITUTIONAL AND PLANNING CONSTRAINTS

Governments influence urban form in many ways. All have implemented an array of regulatory and institutional arrangements. In varying degrees they seek to undertake a broad planning role and to coordinate the activities of a range of infrastructure providers and instrumentalities. At their disposal are taxation instruments (part C) and regulatory approaches such as land use planning (zoning and subdivision). These matters are introduced in chapter D1 which also considers how the adoption of efficient pricing outlined in part B of this report might facilitate planning objectives.

Chapter D2 looks at the land banking and land release policies of State and Territory governments. It examines the key objectives for government involvement in this activity and considers how these objectives are achieved. It also broaches issues about transparency and performance criteria.

This is followed in chapter D3 by a brief examination of some limited aspects of local government's regulatory role, and the potential for gains to be made in improving procedures related to applications for development approvals. The costs of delays and variability of standards are discussed. The role of local councils and their relationship with constituents is linked to issues such as protection of amenity and local heritage. Recent changes in this area are surveyed.

The final chapter looks at influences on construction costs of medium density dwellings, including institutional arrangements in the labour market.

D1 THE LAND DEVELOPMENT PROCESS IN OUTLINE

This chapter introduces the development process and outlines the planning and coordination aims of governments and the instruments at their disposal. Where relevant, the achievement of these broad aims of government in shaping urban settlement is linked to pricing practices discussed in part B.

While this report is primarily about the effect on land use patterns of taxation and financial policies of governments, there are regulatory and institutional arrangements which impinge upon them and can affect efficiency of land use.

An important set of such arrangements are those rules which determine or influence the purposes for which land may be used, and the locations where development may occur. Accordingly, rules about land use planning and zoning influence the values which are placed upon particular parcels of land. A further layer of influence comes through governments acting as land developers in their own right, and so influencing the pattern of subsequent urban development.

The impact of taxation and pricing policies on land use patterns and infrastructure investment decisions is modified by these institutional practices and arrangements. For example, some planning restrictions are a response to lack of full cost pricing by infrastructure providers, or to an inability to incorporate environmental or other third party costs in prices.

The role of land use planning is a very large subject in itself, and this report has not attempted to address it in any detail. However this part of the report does examine the land development process, and the activities of governments as principals in land development, insofar as they are relevant to the discussion of efficient pricing (see part B) or taxation measures (see part C).

1.1 Urban land development

The processes by which urban land is developed usually involve State and local governments, public utilities and the private sector. On occasion the Commonwealth Government is involved owing to its role as a landowner. Typically, private firms undertake the bulk of residential land development, but this varies between States – in some, public authorities play a major role in both planning and land development while in others their involvement is minor (see chapter D2).

Apart from urban consolidation projects, residential land development generally involves the conversion of non-residential land into serviced housing sites. Broadly the major procedural elements across Australia (with the exception of the Australian Capital Territory) can be summarised as¹:

- identification and earmarking of land for future residential development through strategic planning or plans issued by authorities involved in infrastructure provision;
- assembly by a (usually private) developer of a viable parcel of land for residential development;
- determination by the developer, in consultation with other relevant parties (State planning authorities, local government, infrastructure providers) of the concept plan and a plan for staging the development;
- rezoning of the land for residential purposes and approval of concept and subdivision plans by government (State or local) subject to conditions, including the payment by the developer of contributions towards the costs of infrastructure provision by public authorities;
- compliance by the developer with development conditions imposed by State and local governments for the provision at specified minimum standards of required infrastructure and services within the site;
- government agencies extending existing infrastructure networks to the site and providing other infrastructure and services as are deemed to be required;
- the relevant government agency issuing final certification (approval) of the plan and works, and the issuing of individual titles by the Titles Office; and
- approval, usually by local government, of housing constructed on the site.

While the procedural steps in the States and Territories are similar, there is much variation in administrative practices and in the agencies involved.

According to the NHS, the entire land development process takes about two years on average – ranging from one year for relatively simple development through to five years for more complex projects. Landcom said that in New South Wales the process from unzoned land to developed lots can take four or five years.

1.2 The government planning context

The influence of governments on urban development is considerable. All levels of government are active in different ways. Their involvement is manifested

¹ Drawn from NHS (1991d), p. 54. More details are contained in appendix E.

through regulation, taxation and budgetary stances and through provision of urban services. The extent of government involvement, and the level of government concerned, varies within and between the States and Territories.

State and Territory governments have overall responsibility for urban planning, and many have released broad strategic planning documents to guide future urban development. They aim to establish a framework for the region and to identify areas for future development (the *Metroplan* for Perth and the *Metropolitan Strategy* for Sydney are examples). These plans may establish guidelines for urban consolidation and regional development.

Some strategic plans also incorporate regional and sub-regional plans for specific urban areas to identify growth corridors. Such plans seek to coordinate planning for and provision of infrastructure (for example, the *Metropolitan Development Program* in South Australia and the *Urban Development Program* in New South Wales).

More generally, State and Territory governments also determine the policies and objectives of their agencies which provide such infrastructure as water, sewerage and drainage, roads and public transport, and schools and hospitals. These matters are discussed in part B.

All States and Territories have some form of planning coordination arrangements. In New South Wales and South Australia there are coordination committees comprising those agencies with responsibility for planning, finance and the provision of infrastructure. Victoria has a Metropolitan Services Coordination System which fulfils a similar role. In Tasmania most planning responsibility lies at the local government level. A similar situation occurs for Queensland (although the Brisbane City Council is reviewing its role).

Local councils have considerable influence over developments which take place within their jurisdictions. Determining zoning and rezoning rules, and more generally setting conditions on the characteristics of new developments, are key local government responsibilities. Again, this varies considerably among the States and Territories. Some issues specific to local government are taken up in chapter D3 below.

Federal funding arrangements, whether for specific purposes such as Building Better Cities projects or general purpose funding for State and local governments, are other influences on urban settlement (see part C), while some Commonwealth-owned sites are themselves being considered for urban development projects.

1.3 Reasons for government involvement

The common reasons for government involvement in land use planning are:

- to coordinate the efficient provision of infrastructure to meet social and economic objectives;
- to separate or regulate land uses to minimise adverse influences from one form of land use impacting on another;
- to protect or enhance the physical environment; and
- (in some States and Territories) to release new urban land at a rate that serves to keep costs down.

Some governments also have explicit policies to encourage urban consolidation.

The DHHCS said that government intervention in urban form arises from a number of factors which limit reliance on market mechanisms. These include concerns about unpriced externalities such as air and water pollution (see appendix F), the behaviour of natural and legislated monopolies; the ‘public good’ nature of many services; and the inflexibility in urban form which can result from the limited availability of different housing types. The Department said that to be effective in pursuing urban goals, governments require a coherent urban development and strategic planning environment (Sub. 85, p. 67).

In a submission on the draft report, the Department pointed to the importance of strategic planning in establishing an overall framework for the conduct of activity in urban areas:

The magnitude of many urban activities, including the provision of major infrastructure and services, the location of government activity etc are such as to significantly affect very large numbers of individuals and companies. The planning framework provides the certainty which all these players need in order to be able to make decisions on location and investment (Sub. 155, p. 22).

The New South Wales Department of Planning noted that a regulatory system established through decisions in the political sphere can be used to replace market forces in cases where production and consumption decisions affect uninvolved third parties; where the provision of public goods is involved, or where equity considerations need particular attention. Examples cited by the

Department were:

- development control provisions that seek to take account of the broader effects of development, for example, parking codes which ensure that parking demand generated by a development is met by that development and does not contribute to congestion;
- planning regulations which protect and enhance the character and quality of a landscape;
- ensuring equitable access to open space such as local parks; and
- provision of education and health services which are required on the basis of community values to be provided in an equitable manner with minimal regard to ability to pay.

The Department also observed that:

... planning regulatory systems can have unintended effects on the operation of markets, and these may influence the urban development pattern. For example, the restrictions on land supply inherent in zoning and consent systems, and the constraints on development potential imposed by detailed development control provisions, limit the flexibility of land and development markets to match supply and demand, to the detriment of urban consolidation and other efficient forms of development (Sub. 70, p. 8).

The recognition of the potential for unintended effects in this area is consistent with the greater scrutiny being given to regulation in general.

The rest of this chapter briefly reviews some of the rationales for government regulation of land markets that relate to infrastructure issues. (Another, the enhancement of housing affordability, is discussed in chapter D2.)

Efficient provision of infrastructure

It is accepted by most governments that to provide infrastructure efficiently requires that land releases for urban uses be controlled. Put simply, staged release is considered preferable to industry developing scattered parcels of land. Where development is not staged or coordinated with the provision of infrastructure, problems with ‘leapfrogging’ of service provision are said to arise. A public land owner is said to be in a position to more effectively coordinate land release with the provision of services than one or several independent developers.

Control of land release enables coordinated provision of government services in new areas when they are needed by residents, and the public sector is not burdened with infrastructure financing before it is needed. In effect, a supply control is used to meet the investment plans of infrastructure providers.

Minimising public sector outlays for providing infrastructure remains an objective of governments. The costs of providing economic infrastructure (such

as roads and sewers) can vary according to the density, compactness and location of the development, and governments have sometimes sought to use land use planning to encourage development in areas where servicing costs are low. A key proponent of this type of managed development is the Indicative Planning Council for the Housing Industry (see IPC 1990, 1991a and 1992).

More efficient pricing policies may reduce the need for such an approach, which is in part relied upon because much infrastructure is financed through general revenue and users are charged uniform prices. However, if servicing charges for new developments accurately reflected the costs of urban services provision and use, servicing authorities could provide infrastructure and achieve cost recovery without limiting consumer choice or development opportunities.

The DHHCS was concerned that under a more market-driven approach the pattern of urban development would be heavily influenced by the cost-minimising objectives of a single infrastructure provider – the ‘de facto lead agency’ (Sub. 155, p. 21). This development pattern may well not be efficient for other providers.

So long as prices of the other large providers are also required to match costs, however, any lead provider which developed according to its own priorities only, would do so at its peril. The danger it would face is that, if other agencies could follow it only at high cost, and if those costs were reflected in prices, the development area opened up may prove unattractive to buyers. In that case, other agencies would find it unprofitable to follow such a lead, and the lead agency itself would be left with unprofitable investments. Eventually, agencies constrained to meet costs would necessarily take account of wider considerations than their own cost minimisation in their planning.

In many areas, these changes are occurring, and infrastructure providers are moving towards charging developer contributions clearly based on costs of service provision for on- and off-site infrastructure (including headworks). Part B of this report, while acknowledging the difficulties in fully accounting for all costs, argues that these trends should be encouraged by governments. When prices for urban facilities and services are set to reflect the full range of attributable costs, developers and consumers can make investment decisions based on the underlying costs of building or buying in different areas, rather than on administratively-set charges which are, in the final analysis, arbitrary.

Nevertheless, not all infrastructure is provided on a user pays basis. Social infrastructure, for example, is heavily (or wholly) subsidised, and decisions about its provision and financing will be made according to different criteria (this was discussed in part B). It should also be noted that expenditures undertaken by governments for the development of broad strategic plans, such as metropolitan

or regional plans, should not be viewed as outlays which are properly charged to developers.

Out-of-sequence developments

It is often said to be more expensive to service a development which has leapfrogged the 'development front' than one which remains within it. If service providers are permitted to charge in a way which reflects the costs of provision and subsequent use, then agencies could provide the required infrastructure and cover their costs. In fact, efficiently priced leapfrogging might be more conducive to the 'urban village' form of settlement supported by some participants than a steady controlled expansion on the fringe.

In contrast, prohibiting or delaying such developments by planning regulations restricts the choices available to consumers and the opportunities for urban development which can be taken up. If pricing were able to give appropriate signals about locational costs, the burden on planning rules to prevent development that is expensive to service would be reduced.

The planning of new developments needs to take account of demand for new social infrastructure such as schools, police stations and hospitals. Decisions about where to locate them, and the nature of the facilities provided, are made in each case by the relevant agency. This places a premium on good coordination between these agencies and planning authorities.

However, decisions to close or redevelop sites occupied by social infrastructure may also be influenced by taxing and local government rating regimes and by popular opinion. These issues are discussed in parts B and C.

The NCPA noted that developer decisions are not usually of a scale sufficient to modify major development fronts. It argued that if the density and staging of development on the fringe impacts significantly on State budgets, governments should determine the pattern of development sequencing which can be permitted to occur. It noted the conceptual and practical difficulties in dealing with third party effects through prices (see appendix F), and argued that some items of social infrastructure, such as schools, should not be priced in any case. It said that:

... as long as subsidised urban infrastructure remains a significant cost to the government, it will be expected of government that it will configure urban growth and densities to avoid undue demands on public budgets. Thus, Governments could legitimately refuse to service very low density estates with schools, childcare and pre-schools on the basis that household catchments for efficient use of the capital and staffing tied up in these resources are not achieved. Similarly, Governments can legitimately refuse 'leap-frog' patterns of urban development on the basis that (considerably) subsidised additional

infrastructure items, like schools, public transport and health facilities, will have to be provided sooner for the same amount of population growth (Sub. 131, p. 9).

It added that:

Other things being equal, areas developed at '*reasonable*' densities and in a way which permits orderly and efficient extension of social and other infrastructure will cross subsidise very low density developments occurring on scattered development fronts (Sub. 131, p. 10).

The NCPA argued that governments should inform themselves of the sequencing of development which is most efficient in terms of public sector outlays, and drew attention to the modelling undertaken in some States to determine optimum sequencing.

Some other participants made similar observations. For example, the Queensland Government cited a recent study which showed that the cost to the public sector in providing schools or health facilities is sensitive to both development density and development sequencing, and went on to argue that:

It is legitimate for State Governments to distribute these subsidised infrastructure services so that the call on budgets is within reasonable limits whilst meeting the needs of communities. This implies that a State Government should set the benchmark sequence and density of development for which it will provide the shared subsidies.

But it added:

Developers proposing variations from these benchmarks should expect to make up any difference in the costs to Government. If they do not ... they (and their clients) will be the beneficiaries of unfair cross-subsidies and/or communities will have to wait longer than necessary for delivery of required infrastructure services (Sub. 153, p. 2).

The DHHCS argued that even with the use of pricing there continues to be a need for planning of 'out-of-sequence' developments. It said that:

The planning context is necessary to determine, for example, trunk capacity for networked services which need to take account of the fully developed capacity of the entire area to be serviced not merely the development (Sub. 155, p. 20).

The Department also argued that 'out-of-sequence' developments raise particular problems with services such as education, health and transport:

... all of which are considered as a 'right' by the public in these developments. Unless cost recovery is applied to these (in addition to any concept of marginal 'location specific' costs) uncontrolled out of phase development has major cost implications for government. (Attention also needs to be given to the time lags involved in getting these services on the ground in the absence of any planning framework.) (Sub. 155, p. 21).

Evenly-paced development can have advantages for specific infrastructure providers. It also helps in the coordination of the activities of agencies, which brings other efficiency gains in train.

Certainly it would be inefficient for the provision of different services to new developments to be uncoordinated, but multi-front or out-of-sequence developments are not necessarily inconsistent with efficient and coordinated service delivery when prices are set to reflect *all* costs and/or are supported by regulations to manage environmental and other third party costs. There are different means by which coordination can be achieved – indeed, one of the skills of the developer is to coordinate the provision of resources and services to a particular development. Moreover, greater use of cost recovery policies should enhance the ability of service providers to meet the demands placed on them. Of course, more realistic prices would act to deter those developments which depend for their viability on subsidised services.

The fact that social infrastructure facilities and services are publicly provided and frequently subsidised means that private demands for such infrastructure should not be the only determinant of its provision. Planning restrictions on the development front can reduce the risks of under- or over-provision of infrastructure, or of spreading available resources too thinly. But these risks decline as more infrastructure becomes subject to cost recovery processes. This in turn can help guide future planning.

One concern (discussed in the next chapter) is that regulated evenly-paced development may in fact conflict with the objective of providing affordable housing. Staged land release paced to match the planning schedules of service providers may restrict the availability of land and exacerbate land price inflation. This point was alluded to by the UDIA:

... what's happening in Adelaide at the moment is most of the land is owned by the Urban Land Trust, they put up very limited parcels; they may put an 80 acre section up at a time. All that does is you get every developer in Adelaide rushing to the auction forcing each other up higher and higher because if they don't buy it they have got nothing to work on and they know there is a demand there for that piece. So in a sense to suit their infrastructure provision they are forcing the raw land cost up in South Australia (transcript, p. 515).

Neutze noted that:

In the UK, where land use controls have been powerful and effective for many years, there is a broad consensus among those who have studied the problem that planning has reduced the supply and increased the price of land to such an extent that the cities are too compact (Sub. 12, p. 7).

However, he notes that Australian controls have not been as restrictive as those in the United Kingdom. Furthermore, any price-raising effects on land from restrictive zoning practices would have been offset to some degree by under-charging of infrastructure. Consequently, the net effect in Australia of zoning on city area and density is not clear. On the other hand the benefits in terms of land prices of a more responsive release program may be offset by greater cost

recovery policies by infrastructure providers. Again, assessing the net change is not straightforward. (The question of government land release programs and land banking is taken up in more detail in chapter D2.)

Addressing external or third party effects

The existence of external effects (such as environmental degradation, traffic congestion and proximity of incompatible land uses) is an important reason why governments have controlled land use. Neutze (1978) observed:

... the manifestly unsatisfactory result produced by the free market during the industrial revolution provided much of the original impetus for town planning (p. 18).

Clearly, the potential exists for firms and households to ignore deleterious side-effects, for which they do not bear the consequences, when making decisions about location. An often-used example concerns the siting of a 'dirty' industrial activity such as a chemical factory or abattoir near residential areas. It is important that any significant external costs be taken into account in land use decisions.

One way of achieving this is by zoning to separate or regulate particular activities; for example, residential or industrial uses. Land use planning is often used to avoid disputes by providing a mechanism to mediate disagreements between various pressure groups (representing environmental, industrial, recreational, or social concerns). For example, zoning restrictions may be used to protect scenic areas, wetlands and rivers and to maintain green belts in urban areas. Development controls can be used to protect neighbourhood amenity and the perceived 'rights' of residents – for example, residents' access to sunlight could be jeopardised through multi-story development.

It is sometimes argued that zoning allows a longer time horizon to be catered for so that areas for future residential and non-residential uses can be kept intact. With such an approach, a buffer between the incompatible land uses can be sustained. In the absence of enforced zoning, this would be at least partly reflected in prices. New developments close to an objectionable activity would presumably be more affordable than similar developments sited some distance from it. Similarly, any reduction in the environmental amenity of an established area would reduce the market value of existing developments.

Increased land values and rating structures would add pressure for industry to vacate prospective residential land, in the same manner that increased land values facilitate the transition in land use from rural to urban. But such changes may be fragmented, rather than consolidated in an identifiable area.

Zoning can be a highly imperfect means of reflecting the full costs and benefits to individuals and households of engaging in particular activities. It can ascribe an infinite value to nuisance by simply prohibiting the offending activity. For example, a residential zone may preclude multi-unit dwellings. While this may protect existing residents from the 'nuisance' value of flats it could create costs for those seeking high density dwelling in that area (perhaps for affordability reasons). However, zoning is not immutable and where it is perceived to be unreasonable it may be changed, albeit on occasions at great effort.

Zoning is not the only means for ensuring consideration of particular activities. Planning controls which take the form of performance standards specifying minimum requirements for a (re)development allow consideration of costs and benefits and also seek to protect the interests of existing and future residents:

Performance standards attempt to specify a state which is to be achieved, without restricting the means of achieving it (Dawkins 1990, p. 19).

Incorporating environmental damage in prices

Zoning and other forms of regulation may not be the least cost way of addressing externality effects. The costs and benefits of alternative mechanisms need to be considered. Judgments about the merits of regulation and alternative or additional means by which external costs can be taken into account need to be made on an individual case basis (see part B and appendix F).

For example, some traffic congestion problems may be partly amenable to pricing solutions. Congestion tolls could act as a disincentive for commuters to use crowded roads and encourage car pooling, public transport or alternative modes or times of travel.

Concerns about environmental issues such as waste dumping into watercourses may be addressed through regulating the activity, or using planning powers to separate particular land uses, or both. Neutze said:

While ... there are opportunities for increasingly taking account of environmental impacts in some areas of infrastructure pricing, several decades of environmental research have failed to come up with damage functions which are accurate enough to provide the basis for pricing, especially not as the basis for the differential prices at different locations that would be needed to reduce the need for land use planning (Sub. 110, p. 4).

Nevertheless, there has been some progress in this area and a range of instruments is being experimented with (see appendix F). For example, the creation and enforcement of property rights, and the device of community collectives adopting covenants can lead to efficient outcomes by taking direct account of the costs and benefit to particular individuals.

A well-known problem for policy is the pollution of the Nepean and Hawkesbury rivers (see part B and appendix F). Latham (1992) reports that over 70 per cent of land released for housing in Sydney over the next decade will be in the Nepean-Hawkesbury catchment. At present some 23 sewerage plants discharge treated effluent into that river system. Latham argues that the New South Wales Government should set its urban planning around the environmental restraints of Western Sydney – using moratoriums on development and population targets.

Taxation and financial policies are other options. These types of environmental problems are often compounded by charging practices which mask regional variations in environmental impacts. Indeed, Latham (1992) acknowledges a role for pricing to reflect environmental costs:

It is a legitimate goal of government to lift land prices in Western Sydney and make more attractive the affordability of other regions (p. 80).

There is merit in incorporating environmental costs into the prices charged for infrastructure facilities and services. As noted in part B, this can be partly achieved by charges which are set to recover the costs of treatment to designated standards in different locations. Such costs can vary greatly: residents at Palm Beach will be charged between \$300 and \$500 for the provision of sewerage infrastructure which will cost the SWB about \$1500 per dwelling to provide because of the location and the terrain (see appendix F). Higher prices would be expected to deter some development. But prices should not be used as a means to discourage development for its own sake.

Access issues

Disadvantaged groups in the community have below-average access to, and command over, resources. Tenants of rental accommodation such as older housing stock, boarding houses and the like, for example, may be placed in a vulnerable position when the values of land or buildings used for that purpose rise, perhaps because of redevelopment pressures. It has been argued that because disadvantaged groups often have low access to housing outside of polluted, noisy and congested environments, their needs should be given special weight in planning decisions.

Land use planning as a means of delivering assistance to disadvantaged groups is fraught with difficulties. The taxation and social welfare systems – the usual mechanisms by which income is redistributed in line with government objectives – can be targeted more effectively. They are also much more flexible, since the assistance can be quickly altered as the recipients' circumstances change.

Using blunt instruments such as land use planning to meet social goals may have unintended consequences. They can deny productive development opportunities,

perpetuate urban blight and maintain inefficient use of potentially high value land. They can also work against their own objectives. When they restrict the land made available for residential use, the resultant price rises can exclude disadvantaged or low income groups from certain suburban developments. Moreover, existing residents may, through land use planning controls, try to resist further or different types of development – for example, to protect open space and low density development. Indeed, the Royal Australian Planning Institute (NSW) said that:

... progressively finer grained zones have worked to protect particular districts from intensification (and sometimes invasion). This system enables communities to deny others the opportunity to occupy the locality (Sub. 48, pp. 6-7).

Information issues

Part of the economic rationale for land use planning is that it provides both private and public investors with better information about future conditions against which to make location, land use and investment decisions. Neutze observed:

If private sector development occurs in very large tracts, so that many of the decisions that are external to a small developer are internalised, it can take on the land use planning function. For such a private developer, like a public authority, future demand is unknown so that mistakes will occur. It is certainly arguable, however, that private developers are generally better off with than without land use planning. Historically private developers have been amongst the strongest advocates of public land use planning (Sub. 110, pp. 4-5).

According to the IPC, metropolitan plans can be useful in focusing on broad topographic and infrastructure concerns, but the extension of these plans into detailed policy prescriptions is often hampered by a shortage of data.

In its 1991 land report the IPC (1991a) was critical of the lack of timely and accurate data on current land stocks. It observed that data to determine vacant allotments in the major urban areas of New South Wales, Victoria and South

Australia were only available to June 1990:

In nearly all States and Territories, with the exception of the Australian Capital Territory, it was not possible to accurately determine the 'actual' stock of vacant completed allotments available to the market (p. 3).

An outline of the environment, planning and coordination process and land development roles in each of the States and Territories is provided in appendix E.

1.4 Better pricing policies facilitate better planning

If land use plans and zoning restrictions are too rigid they tend to be over-ridden; if too broad, they can soon become irrelevant. Reflecting this, zoning and development control practices are moving away from defining permitted or prohibited activities per se, towards the specification of objectives encompassed in development approvals and conditions (see chapter D3). This is indicative of a growing recognition of the need to liberalise land use planning regulation.

However, many argue that more needs to be done. That there is scope for increased efficiency and avoidance of duplication in planning procedures was raised by the City of Melbourne:

It is arguable that in terms of the depth and detail of controls, multiplicity of separate planning schemes, intricacy and extent of appeal rights, volumes of objections to decisions, variety of roles for differing authorities, and complexity of its legislative base, the State of Victoria may have one of the most convoluted planning regimes in the OECD nations (Sub. 25, p. 37).

The New South Wales Department of Local Government and Co-operatives said:

There are institutional constraints surrounding land use decisions in NSW which add to the complexity of the process. In local government there are a number of professional groups eg engineers, planners, each locked into their own culture, which maintain their traditional views and their traditional 'turf' (Sub. 70, p. 6).

Sorensen (1992) is more blunt:

... planners are reluctant to adopt such flexible control mechanisms as performance standards, which have been advocated for years. They prefer instead to stick to the certainties and rigidities of zoning that provide marvellous opportunities for rent-seeking behaviour on the part of harassed property developers ... (p. 34).

Planning and zoning are most effective when aligned with market mechanisms. Detailed planning and zoning can be called for where prices charged for the provision of infrastructure facilities and services do not reflect the full social costs incurred. For example, the extent to which zoning is employed to separate industrial and residential areas will be influenced in part by whether taxation and financial measures which take account of such matters can be used. (Appendix F

provides some examples of when taxation or pricing policies can take effective account of environmental problems, and discusses other cases where regulatory or institutional approaches are more appropriate.) The more use is made of pricing to take account of the social costs of urban resources and services, the more likely it becomes that broad planning regimes would be adequate to deal with residual concerns.

The Queensland Government acknowledged the general thrust of the Commission's view that market mechanisms can reduce the need for detailed planning and controls, but cautioned that there is a need to recognise the role of strategic and statutory planning in achieving efficient urban outcomes (Sub. 153, p. 1).

The New South Wales Department of Local Government and Co-operatives saw a role for efficient pricing principles in tandem with more flexible regulation:

It should not be a matter of choice between zoning and regulation of land use replacing more efficient financial and taxation policies. It is necessary instead to have both an effective system of pricing, and flexible, objective and performance oriented planning policies (Sub. 70, p. 5).

The NCPA pointed to the need to find a balance:

... in which the necessary operation of planning can be optimised in ways which are consistent with efficiency principles (Sub. 131, p. 3).

It noted the conceptual and practical difficulties in incorporating third party effects into prices – as discussed in part B and appendix F – and expressed doubt as to the extent to which pricing mechanisms were capable of leading to a reduced role for urban planning by governments.

For a variety of reasons, governments have not in the past permitted or required prices to play a major role in guiding decisions taken by infrastructure providers and by existing and potential homeowners. The prices which have guided the decisions of householders have largely been set by political concerns. But this is changing. As prices increasingly incorporate planning information about the relative costs of different forms of urban development in different locations, and as suppliers and households respond to these signals, the pattern of urban settlement will become more 'efficient'. Decisions about when to provide and where to place infrastructure, and the quality standards to which it is built, will be guided more closely by its cost. This has clear advantages for efficiency in the way in which cities develop.

D2 GOVERNMENT LAND BANKING AND PUBLIC SECTOR LAND DEVELOPMENT

Governments participate alongside the private sector in land development by servicing and retailing allotments or by stockpiling broadarea land in an attempt to capture land value increases from urbanisation. The prime motivation for government involvement in this commercial arena is to improve 'affordability' by stabilising and lowering prices for residential land. This chapter considers the role of public sector developers in meeting that goal.

2.1 Government as a participant in land development

In some States and Territories, public authorities not only play a major role in land use planning, but also act as principals in land development. In others their involvement is minor. Some seek commercial rates of return, while others target the low cost end of the market to assist first home buyers. Most seek to ensure a supply of 'affordable' land and to stabilise prices. Some public sector land developers concentrate solely on the production of allotments while others are akin to developer-builders. There are also some public-private joint ventures.

A discussion of the respective public sector land developers can be found in appendix E. Government participation in land development can cover all land uses, whether rural, industrial, residential or commercial. The role of government also extends to land development in non-metropolitan areas. However, the main focus of this chapter is on governments as players in urban and future urban land development.

Retailing

Landcom, the marketing arm of the Department of Housing, develops up to 40 per cent of new urban land released in New South Wales, although its share has been as high as 63 per cent. It aims to balance private sector production and to moderate the cyclical swings of the Sydney land market.

The Urban Land Authority (ULA) of Victoria usually handles around 10 to 20 per cent of development sites, but recently has controlled about 30 per cent. The ULA claims success in limiting price volatility and maintaining a steady supply of affordable blocks. It also acts as a developer for other State bodies, for example, it may develop and market surplus land for a State department and charge a management fee.

Homeswest is the Western Australian Government's public housing authority and Perth's largest developer, accounting for 15 to 25 per cent of the metropolitan market. It develops and provides land for public rental housing and the first home buyer market.

Homeswest is not the only public sector developer in Western Australia. In July 1992, the Western Australian Land Authority (WALA), trading as LandCorp, came into existence amalgamating the activities of LandCorp, the Joondalup Development Authority and the Industrial Lands Development Authority. LandCorp has 10 per cent of the residential land development market and 30 per cent of the industrial land development market. The Rural and Industries Bank also develops metropolitan residential land (3 per cent of the market), while the Department of Land Administration is involved in development of non-metropolitan, industrial and commercial development on Crown land.

Wholesaling

The South Australian Urban Land Trust (SAULT) is a wholesaler of land. It currently holds about 3700 hectares of broadarea stock. The SAULT may also develop land in joint venture arrangements. It holds up to five years' supply of land which is zoned urban residential and commercial, and future urban area holdings which may be required in up to ten years.

In Victoria, there has been some discussion about the ULA engaging in wholesaling. At the initial round of public hearings, representatives for the Victorian Department of Premier and Cabinet argued that there could be benefits in the ULA adopting a stance similar to the SAULT (transcript, p. 107).

In some States and Territories most development is private

There is little public land development in Queensland apart from that undertaken by the Department of Lands and the Department of Housing, Local Government and Planning, which together produced about 700 lots in 1991-92. The role of these departments is currently under review. The Brisbane City Council acquired some land during the Great Depression. A feature of the Queensland system is that much responsibility for decision making on planning and development matters is devolved to local governments.

The supply of residential land in Tasmania is not coordinated by any central agency. The local development industry comprises mainly small builders.

In the Australian Capital Territory ownership of most future urban land is vested with the Territory Government and was acquired at rural prices by the Commonwealth when the site for the capital was confirmed. At present all land development in the Territory is undertaken by a small number of private

operators. The Territory differs from the States and the Northern Territory in that the government initiates sub-division and once land is developed it is held by individual lease usually for 99 years.

The Australian Capital Territory Government is considering re-entering land development in the Territory. The IPC recommended in its 1992 residential land report that provision be made for both the Australian Capital Territory Government and the private sector to undertake land servicing in the Territory.

All development in the Northern Territory is undertaken by private developers, who may buy leases and are subject to a development plan administered through the Department of Lands and Housing. After development, the land is converted to leasehold with the Government retaining a buy-back mechanism.

The Defence Housing Authority (DHA), is the only Commonwealth agency involved in land development. It does not seek to influence the housing market. In 1987, the Commonwealth Government commenced a ten year plan to improve the stock of defence housing (a \$750 million program). The DHA has large joint venture projects in Wattle Grove in Sydney (Delfin is the project manager) and Simpson Barracks in Melbourne (Pioneer Housing Group).

Some summary data on public sector involvement in land development is presented in table 1, which confirms that public land development for retail purposes is significant in New South Wales, Victoria and Western Australia. The South Australian Government is a significant wholesaler, while the Territory governments are effectively monopoly land holders. Development in Queensland and Tasmania is handled by the private sector. More details are provided in appendix E.

2.2 The objectives of government participation in land markets

The objectives of government land agencies and the instruments used to achieve their aims vary between States. Whether stated or implicit, common themes include coordinated planning with other government agencies; price stabilisation; affordability; coordination of human services; and urban consolidation. Other arguments, such as the need for governments to demonstrate innovative practices (for example, the viability of higher density developments) to private sector developers, who are said not to be willing to take risks in this area, have also been raised.

Table 1: **Characteristics of land development in the States and Territories**

<i>State</i>	<i>Government development</i>	<i>Rate of return</i>	<i>Stocks/land banking</i>	<i>Comments</i>
New South Wales (Landcom)	Around 30 per cent. Nearly 40 per cent of low end market.	Break even or better.	Retailing role. Estimated potential lot holdings around 35 000 and around 12 000 lot equivalents of Crown land.	Landcom operates mainly at the low end of the market (70 per cent of lot production).
Victoria (ULA)	About 10 to 20 per cent.	Marginal to 30 per cent.	Retailing role. Broadarea residentially zoned land capable of development to 15 000 lots over 10 years.	Aims primarily at first home buyers.
South Australia (SAULT)	Wholesaling.	Confidential.	Prime role as a wholesaler. Holds 3755 hectares in land bank.	Can engage in development as a joint-venturer.
Queensland	About 10 per cent (NHS estimate).	..	Some land held by Brisbane City Council.	
Western Australia (Homeswest, LandCorp, Rural and Industries Bank)	20 to 30 per cent.	Variable.	10 year stock of residential developed lots.	Homeswest explicitly aims at first home buyers and rental housing.
Tasmania	..	..	..	..
Northern Territory	..	..	Monopoly land holder.	..
Australian Capital Territory	..	..	Monopoly land holder.	Consideration is being given to re-entering land development.

For example, the Brisbane City Council said:

... government may have a legitimate role in land development: to assemble land parcels in locations with fragmented ownership; avoid leap frogging and encourage more efficient use of trunk infrastructure; facilitate urban renewal in high value inner-city locations (Sub. 117, p. 11).

It added that:

It should be recognised that there is strong justification for governments to reserve land in anticipation of known future needs, eg for major transport corridors (Sub. 117, p. 12).

Some of these objectives relate to land use planning – discussed briefly in chapter D1. In other cases, government agencies see a land development capability as a way of supporting or underpinning their housing objectives.

LandCorp said that:

... the objectives of residential land development by Government can be stated as the provision of land at the lower to middle price range of the market to ensure that a competitive supply of such land is available (Sub. 152, p. 4).

The South Australian Government said that the benefits of the involvement of SAULT as a wholesaler of broadarea land in Adelaide are:

- lower prices of land to the new home buyer
- a steady supply of land for the development and housing industry
- lower cost of services in new development areas because of orderly and efficient staging
- better urban design and planning of new development areas
- co-ordinated provision of government services in new development areas, at the time when they are needed by residents (Sub. 161, p. 17).

It added that SAULT's activities help discourage speculation, are a means of broadly staging land development, and promote a more orderly, more dense and more quickly filled pattern of development, thereby allowing for best use of infrastructure (Sub. 161, p. 1).

Homeswest argued that its presence in the market helps to control speculation, and it ensures that only genuine first home buyers purchase its land. It also said its activities, including welfare housing, are partly financed from income from land sales. It said that it requires a land development capacity to allow it to provide 'social balance' to its operations. It added that its land development function allows it to help control speculation, to target first home buyers, and to undertake, and demonstrate, innovative practices, including those which facilitate greater urban consolidation (DR transcript, pp. 5-7).

For the purposes of this inquiry, the Commission has not examined the role of government in providing public housing. Indeed, the Commission is undertaking a separate inquiry on that issue, to be completed towards the end of 1993.

However, looking at the land development function itself, the principal motivation behind the activities of government land developers appears to be to provide 'affordability' – whether generally or to specified groups – as the following passages indicate:

The general approach of Landcom in moderating prices is by way of a supply side solution ... (Sub. 95, p. 6); [Its] participation in the land development industry is directed towards moderating price movements of land by influencing the supply of land available in a highly cyclical and unstable market (Sub. 150, p. 6).

... play a key role in the implementation of Government policy for affordable housing by management of the supply of broadacre land (SAULT 1990, p. 6).

... supply affordable land and housing opportunities, particularly for first home buyers, and act as a stabilising influence on land prices (ULA 1991, p. 11).

... providing affordable land for low income householders (Homeswest, Sub. 57, p. 1).

Government land agencies attempt to achieve these aims through intervention in the land market. For example, the ULA and Landcom attempt 'strategic interventions' by retailing completed allotments in specific sub-markets to satisfy unmet demand or to stabilise prices during demand surges. On the other hand, the SAULT operates as a raw land wholesaler. It purchases and stockpiles large amounts of broadarea land around the fringes of Adelaide in an attempt to reduce speculation and capture land value increases. This is known as land banking.

A number of governments have shown a preference for direct intervention in land markets over alternative measures to influence housing affordability. But there also appears to be scope for land markets to work better. For example, it is probable that government intervention through land use planning has itself raised the price of land. Neutze noted that:

Such negative controls by their very nature reduce the supply of land available for development and cause its price to increase (Sub. 12, p. 7).

Indeed, recent studies suggest that the land release process can be improved, with gains in the form of lower costs. IPC attributes land supply problems to institutional processes which fail to keep pace with demand during periods of higher growth. Where the problem is exacerbated by a lack of funds on the part of infrastructure providers, infrastructure pricing reforms may in the longer term help offset this.²

² It is also important to note that, subject to zoning rules, rural land in proximity to urban centres increases in value as prospective returns from urban land use outstrip those for

2.3 Price levels and price stability

The crucial issue is the extent to which governments acting as land developers can affect land prices across-the-board. Clearly, they could selectively provide cheaper land in target locales through lower cost recovery, exemptions from land taxes, reduced margins, discounting, cross subsidisation, and running down capital reserves. This would be a cumbersome and indirect means of improving access to housing for a small number of clients. To be fully effective, government land development needs to have an across-the-board influence on prices. To do so, there are two major avenues available. They are:

- to lower the price of land and to stabilise prices during demand surges through land release from buffer stocks (either wholesale or retail); and
- to reduce the price of land by capturing some of the margin between rural and urban land values (a wholesaling role).

A starting point in any analysis of the ability of government land developers to lower or stabilise prices is to assess their *potential* for so doing. One indicative estimate of the raw land component of residential land values is presented in table 2. This is where government land developers may have scope to influence prices and represents around 20 to 40 per cent of the total land cost. Government land developers cannot service land more cheaply than private developers, although they may opt to take a smaller margin than the 30 to 35 per cent return reportedly required by private developers.

Price stabilisation measures have generally been employed for agricultural commodities in response to problems of supply variability (weather, drought, disease); the extent of price changes required to dampen demand in time of shortage, or alternatively, increase demand during surpluses; and the inability to instigate any real supply response in a particular season.

rural use. In the absence of land use controls, these changes in value will influence land use. Consequently, while land may initially be used for farming, as the urban front encroaches it may be possible to earn a higher return by using the land for urban use. When urban rent (net of conversion costs from rural to urban use) exceeds rural rent this will be reflected in higher land values, although whether this land is immediately converted to urban use will also depend upon owners' expectations of future price changes. Thus, even in the absence of land use controls the value of fringe land for urban purposes will usually exceed the value for rural use. This suggests that not all of the difference between rural and urban land values can be attributed simply to zoning. Therefore, the effect of zoning on land prices may be overstated.

Table 2: Residential land costs

	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>	<i>Perth</i>	<i>Adelaide</i>
Acquisition	30035	8350	18052	10050	9530
Total cost	78902	35855	53564	34099	30172
Raw land component (%)	38.1	23.3	33.7	29.5	31.6

Note: The difference between the acquisition and selling price reflects the following components. Development costs (internal roads and drains, main internal sewer, water mains etc); *external and internal authority requirements* (major road intersection works, main sewer outfall, main drain outfall and external electricity supply); *authority costs* (stamp duty, authority levies, reserve and open space contributions, land tax etc); *financial and management costs* (interest on purchase and development and management fee); and *selling costs* (advertising, agents' commission and legal fees).

Source: Derived from UDIA, Sub. 18, p. 5.

The limited supply response capability for residential land is the only feature in common with agriculture. In the short term, the supply of developed lots is fixed and any surges in demand will be reflected in higher prices. Prices therefore rely critically on stock levels.

Instruments that have been employed for agricultural commodities to overcome these characteristics include buffer funds and buffer stock (stockpiling) schemes. Stocks can be accumulated under favourable conditions and run down when prices are high.³

The Australian experience has shown that price stabilisation schemes in agriculture have often failed in terms of meeting their objectives and of providing community-wide benefits. There has been a tendency for the holding costs of stock carriage to make such schemes inordinately expensive and self-defeating. Moreover, for a buffer stock system to work most effectively, the relevant agency needs to buy at the bottom of a price cycle and sell at the top. There is no guarantee that governments can do this any better than private bodies. Governments have no real advantage in foresight.

Nevertheless, buffer stock measures have been the preferred instrument for stabilising land prices. The Victorian Department of Planning and Urban Growth noted that:

³ For agriculture, buffer stock schemes are used to iron out price fluctuations with the ultimate aim being to maximise sales and/or producer returns. With public land development the objective of buffer stocks is to reduce (or at least stabilise) land prices. Private developers would carry stocks with the object of increasing profits through speculation rather than stabilising prices, although price stabilisation may well be the result of their activity.

The efficient operation of the land market requires that a level of surplus stock be available to act as a buffer against sudden changes in demand. Without such a buffer, stocks can be quickly exhausted as a sudden surge in demand cannot be balanced by an equally rapid increase in supply (DPUG, p. 6).

Similarly, in the New South Wales *Urban Development Program* it is stated that:

The housing industry has asserted that the lack of vacant subdivided land ready to come on the market was a contributing factor in recent large increases in land and housing prices in Sydney. Solutions to this problem will need to examine the factors affecting land availability and development. A possible mechanism that can be used to alleviate the problem is the use of a buffer stock of zoned land to stabilise the housing market (Department of Planning 1990, p. 30).

The SAULT said:

Land banking stabilises land prices by dampening speculation, and assisting the private sector in maintaining an adequate supply of land. This is particularly pertinent in Adelaide, given that development is restricted to north and south corridors. Without land banking it would be possible for private landowners to restrict supply thereby creating artificial shortages leading to considerable price fluctuations (unrelated to the fundamental land characteristics) and uncertainty (Sub. 108, p. 8).

Holding costs

As with agriculture, a key issue is the cost of holding buffer stocks. An estimate of holding costs in Sydney for *completed lots* and for land *held in the pipeline* before the completed lot stage was undertaken by Mitchell McCotter and Associates for the IPC (1991b). That study concluded that:

The costs of holding cushion stocks or reserves are relatively high when they are held as completed lots and it would be a misallocation of society's resources to encourage market inefficiencies of this type. Conversely, the cost of holding reserves at the end of the pipeline, before the construction stage, is much more modest and this is the point at which reserves should be held (p. 5.5).

However, unlike government land development agencies, private developers are reluctant to hold stocks in any part of the pipeline. Bird (1991) has reported that land banking is generally avoided by developers who have adopted a policy of tighter inventory control. Apart from holding costs, land tax and the availability of option taking may be other incentives to minimise holdings. Holding stocks can also be risky. Many developers with large stocks of land suffered losses in the mid-1970s when economic activity declined and slow sales reduced cash flows (Neutze 1978). Land and property investment trusts have proved to be risky activities in more recent times.

In practice, smaller parcels are purchased and developed as soon as practicable. Landcom said that:

Given high holding costs, capital charges and uncertainty in the rezoning process the private sector has tended to avoid land banking in recent years (Sub. 95, p. 2).

Indeed, the IPC has identified an emerging trend in residential land production of the provision of land on a 'just in time' basis in all States. Carrying stocks has enough attendant difficulties to discourage private sector agents from so doing, especially when interest rates are high. This may not always be the case.

Public sector developers can more readily absorb holding costs – they have more extensive capital bases; are exempt from certain taxes and charges (see part C); have income derived from leasing broadarea stocks for agricultural purposes; access to cheaper finance, and nebulous rate of return criteria. Nevertheless, land banking locks in large amounts of capital. The UDIA said:

In some States, public sector land development is becoming more prevalent. [They] can hold large tracts of land for long periods of time. The stockpiling of land ties up large sums of taxpayers' money. Taxpayers' funds would be better used by State governments to ensure that necessary infrastructure projects are undertaken (Sub. 18, p. 11).

This comment highlights an inherent conflict that can arise between stabilisation objectives on the one hand and funding infrastructure on the other. As more resources are devoted to the acquisition and holding of land stocks, less is available for development. Where development cannot proceed owing to insufficient funds for the provision of infrastructure (social and economic), or delays in its provision, downward price pressure from stock holdings of land will not occur.

In examining ways to stabilise land prices, the IPC (1991b) concluded that, because of the multitude of variables underlying demand and housing affordability, including international economic conditions and political influences (fiscal, monetary and immigration policy), it is reasonable to expect continued fluctuations in demand and affordability. However, this:

... could be improved by increasing capacity to expand supplies in the short-term, such as by minimising the length of the development pipeline, and by improving the flow of market information to the industry and policy makers (p. 3.39).

This finding echoes the views of the NHS and the IPC that there is scope to improve the 'development pipeline'. Through improved administration of development proposals and a better flow of information to the industry (public and private), planners and policy makers, there may be potential for less reliance on extensive stock holdings. These issues are touched on in the next chapter.

Assessment of price stabilisation

The ability to influence prices across-the-board depends on how much land is in public hands. One view is that a total monopoly is needed to stop some

landowners holding out 'choice' sites and a near monopoly required to control the supply of land. Roberts (1977) looked at some Canadian cities, comparing those which controlled all of the supply of land against others which controlled about a third, and concluded that:

... the actual market share needed to influence price seems to be in the neighbourhood of 80 to 90 per cent (cited in Neutze 1978, p. 212).

Others argue that a much lower market share can still enable a government land developer to exert price leadership. Neutze noted a study by Roberts and Svensson (1977) of Dutch and Swedish experience which lent support to this view. However that study also noted that Swedish municipalities which owned large areas of developable land tended to have lower land prices:

This highlights the fact that it is not only its share of development over any time period that determines a [land] commission's influence but also the resources it controls (land stock and capital) which enable it to respond to any upsurge in demand (Neutze 1978, p. 213).

However, there are dangers associated with a high level of market penetration. Roberts (1977) points out with respect to Red Deer, Saskatchewan, that mistakes in forecasting housing demand impacted on land prices 'with a resultant disruption of land supply'. Archer (1976) wrote about Canberra as the only Australian city with a government monopoly, noting that:

... the [National Capital Development] Commission failed to provide an adequate supply of house and flat sites over a period of years up to August 1973, so that home-site prices in Canberra rose to the second highest level between the capital cities of Australia (p. 11).

LandCorp argued that, if targeted, a small overall presence can be effective in influencing supply and prices in a submarket:

To achieve this it is not necessary to dominate the marketplace. Rather it is only necessary to influence the lower valued end of the market which is around the lower quartile in terms of price. In this context, a market share of around 5 to 10% represents 20 to 40% of the target market ... [LandCorp's] minority presence as a retailer in the lower end of the market is sufficient to ensure a competitive supply (Sub. 152, p. 4).

At the draft report hearings Homeswest said that the price increases experienced in Perth in 1988-89 would have been worse had Homeswest not been operating in the market. It further argued that during the early 1980s the Western Australian Government sold a large proportion of Homeswest's broadarea holdings, with the result that it could not cope with the impact of higher demand in 1988-89, and as a result Homeswest was unable to help moderate prices (DR transcript, p. 6).

The South Australian Government said that:

SAULT has been successful in keeping broadacre land prices stable. The price of broadacre land it has sold to developers has declined in real terms by an average 2.5 per cent per annum over the decade to 1991 (Sub. 161, p. 19).

Landcom noted the extreme price volatility which occurred in the Sydney land market during the 1980s, but argued that its withdrawal from that market would lead to even greater fluctuations in prices:

This is particularly the case in Sydney where generally land and housing prices are high, (in comparison with those of the other capital cities) with the greater investment potential of housing leading to greater instability in the market (and greater fluctuations in price and market activity levels) ... Prices increase substantially as demand increases, and this is exacerbated by an inadequate supply of residential allotments as available stock is purchased.

It said that the private sector will generally only gear up for major increases in production when price increases and sales predictions are sufficient to demonstrate adequate returns. It also noted other factors which create risk and uncertainty, thereby reducing private sector participation. These include:

- high land development finance costs and lack of access to finance
- increased development costs and lengthening approval times
- difficulties in land assembly (Sub. 150, p. 7)

The SWB also argued that:

... the presence of a strong and stable player in the market offers distinct advantages in tempering the boom and bust cycles endemic to the Sydney housing market (Sub. 150, p. 4).

It argued that there may be a role for government in providing stability within the market as a means of facilitating efficient lot production, and enhancing affordability, and noted that ventures such as the Rouse Hill project would have been more difficult to organise had Landcom not been involved (Sub. 150, p. 4).

The New South Wales Treasury noted that Commissioner Mant's report on Landcom had provided some support for the view that government land developers are unable to influence the level or stability of prices:

... by indicating that [Landcom's] policy of purchasing land had not been effective in dampening fluctuations in building industry activity (Sub. 150, p. 8).

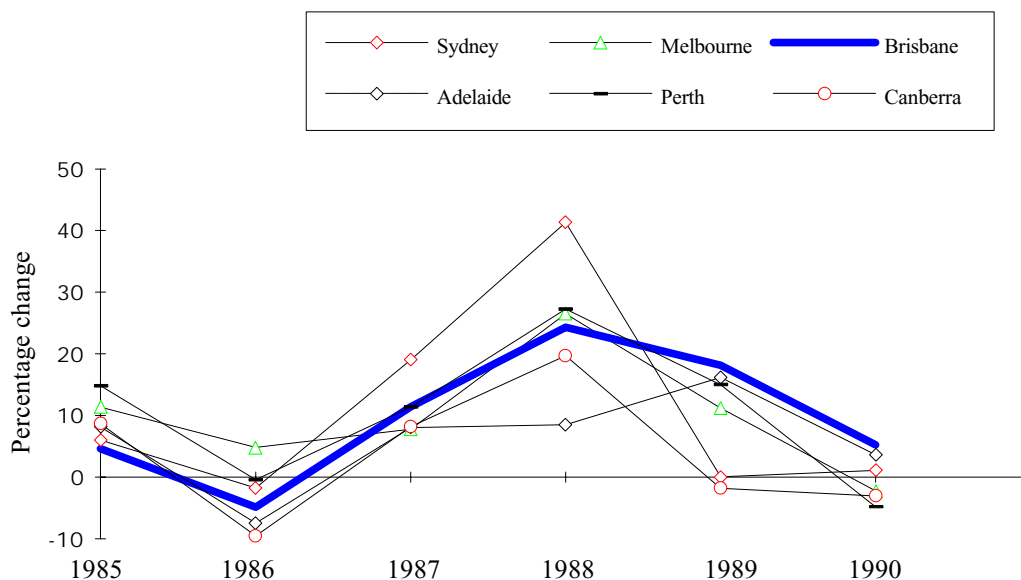
It noted that:

The extent and form of the [New South Wales] Government's future role in land acquisition activities together with the many other recommendations of the Inquiry are currently the subject of a review by a Taskforce appointed by the Premier (Sub. 150, p. 8).

Price volatility is common to all cities irrespective of the extent, if any, of government involvement. To illustrate this, figure 1 shows annual percentage changes in the median price of (new and established) houses in six Australian capital cities. However, as government land developers tend to operate at the

lower end of the market, these median price data should be regarded as indicative only.

Figure 1: **House-price inflation rates in six Australian cities, 1985 to 1990**



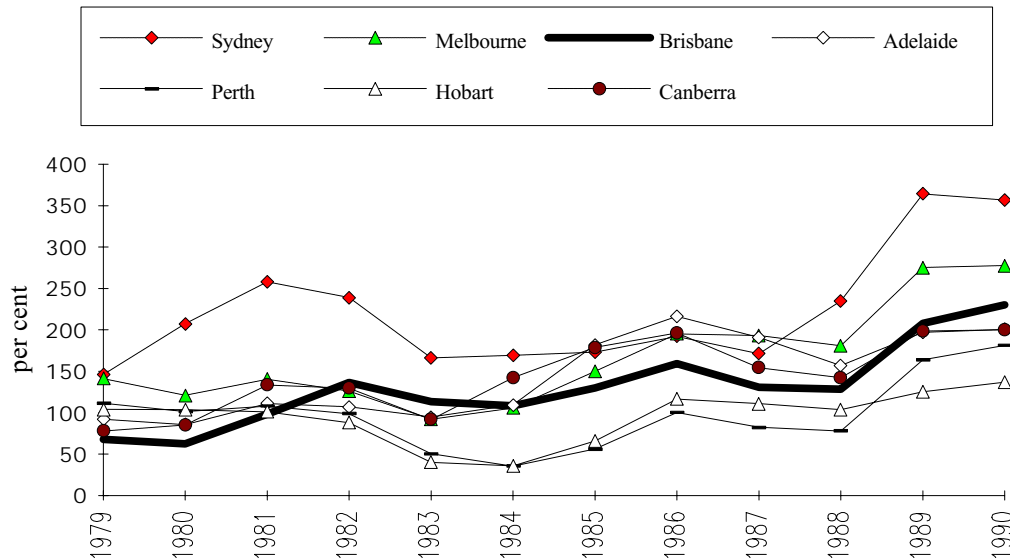
Note: The inflation rates are calculated as an annual percentage change in the fourth quarter of each calendar year.

Source: NHS 1991b, p. 13.

Figure 2 presents annual data on changes in the ratio of the deposit gap (the difference between median house prices and borrowing capacity at current interest rates) to annual income in Australian capital cities. It incorporates house prices, interest rates and incomes. While interest rates would tend to vary little across States, average weekly earnings may be affected by the health of the various state economies. The figure shows that for Sydney in 1979 the required deposit for a purchaser on average weekly earnings to obtain a median-priced home was about 146 per cent of average weekly earnings (1.46 years average earnings). By 1990 this had increased to 356 per cent (3.56 years average earnings).

As noted for figure 1, there are limitations in using these data to compare cities with a large government land development role against the 'private enterprise' city of Brisbane. Median house prices are not a particularly good proxy for land prices or for the first home buyers market. Accepting these limitations, it is nevertheless relevant that price volatility occurs in all of the cities, irrespective of whether government land development occurs or not.

Figure 2: **Ratio of deposit gap to annual income (per cent), capital cities, 1979 to 1990**



Note: The deposit gap is the difference between median house prices and borrowing capacity at current interest rates. Borrowing capacity is calculated for a household on average weekly earnings which is assumed to have purchased a median priced home with a 25 year mortgage at the prevailing rate of interest and with repayments equal to one quarter of monthly salary. For a full exposition of estimation procedures and data sources, see: NHS 1991f, p. 12.

Several government land agencies said that they have a reactive role in releasing land as the private sector vacates the low end of the market. Acting in this manner is unlikely to exert downward price pressure. ULA, Landcom, and Homeswest do not have significant market share, suggesting that their ability to influence prices across the board is not significant. For example, analysis by Mitchell McCotter and the IPC have shown extreme price volatility in Sydney during the 1980s, despite the activities of Landcom, Australia's largest government land developer.

However, even if a government land developer was large enough to achieve significant market penetration, where it was committed to competition between itself and the private sector on equal terms the scope for price stabilisation would be limited.

A further difficulty is that a view as to the effectiveness of government land developers in stabilising prices requires a judgment to be made about the likely behaviour of private land developers were they to control the entire market.

Capturing the ‘unearned increment’

The second issue is whether government involvement in land banking can allow it to capture land value increases arising from encroaching urbanisation and from zoning decisions. If so, these funds could be used to fund infrastructure, or forgone to provide cheaper land. This approach is based on the view that when land is zoned to permit it to be used for urban development, an increase in raw land values often results. This can be understood more readily from figure 3 (not necessarily to scale).

Figure 3: **Components of developed land costs: a simplified view**

Raw land	‘unearned increment’	Developer contribution for economic infrastructure	Developer’s margin
O	A	B	C
			D

OA represents the raw land component of the final price – the land’s value in a non-urban use (generally its value as agricultural land). Zoning is said to raise the value of the land, in this case by AB, reflecting its value in urban use. A person holding such land that has been zoned for urban use would sell for OB, thereby capturing AB as a windfall gain (excluding transaction costs such as stamp duty, legal and agents’ fees). Having paid OB a developer puts in economic infrastructure (for example, reticulation and internal roads) for the allotment, signified by the area BC. After a margin to reflect return on capital (CD) the price faced by the consumer is OD.

What is the ‘unearned increment’?

The portion AB has been termed an ‘unearned increment’. Other terms used include speculative return, unearned property enhancement, windfall gain, rezoning rent and betterment. According to the NCPA it is ‘betterment’ which is entirely attributable to the capitalisation effect of land proximity/access to social infrastructure, and accrues to raw land holders and developers as unearned income:

This premium is made possible, at least in part, by the actual delivery of social infrastructure by the community at large or the implied promise that such infrastructure

will be provided. If the land developer is able to acquire raw land at close to agricultural values, this socially created value will be captured as a super-profit over and above the normal margin for profit and risk on the development capital outlaid (Sub. 65, p. 9).

The NCPA and the Adelaide Planning Review argued for the ‘unearned increment’ to be captured by governments through land ownership. Failing that, the NCPA considered that a betterment tax could be levied. This view is based on a premise that those who buy and sell land have no right to take the ‘socially created added value’. A similar stance was advocated in a report to the Queensland Local Government Association:

... literally overnight, a public decision allows them to use their land for a more valuable purpose. Private fortunes have been made in these circumstances – not always fortuitously, as the history of speculative land dealings amply demonstrates – *yet no systematic attempt has been made to confront this continuing phenomenon and capture these unearned windfall increases in land value for the community whose public agencies have created them* (Sub. 91, p. 2, emphasis in the original).

The implied instantaneous land value increase arising from rezoning can be misleading. When land is purchased prior to urban zoning the selling price will, in all likelihood, reflect some degree of capital appreciation simply because the encroachment of the urban fringe signals that the land is likely to be rezoned at some stage in the future. Capital appreciation will occur gradually over time, in the expectation of an eventual change to urban use. The zoning decision merely allows the change in use of land which already reflects urban use in its price. In this respect the term ‘rezoning rent’ is open to misinterpretation as it connotes a large and instantaneous rather than incremental change.

Large and instantaneous gains can obviously arise, however, when changes to zoning are made outside of recognised paths of development – for example, when a hitherto sacrosanct ‘green belt’ unexpectedly becomes available for development, and markets are able to absorb the increased supply of land without unduly depressing existing values. In practical terms, the larger is the ‘unearned increment’ that flows from a rezoning decision, the more likely it is that land supply has been unduly restricted to that point.

The NCPA and other writers regard the appropriation of the ‘unearned increment’ as essentially a distributional, rather than efficiency-related issue. The prevailing view is that a levy on land rents is one of the few taxes that need not distort resource allocation.⁴ The basis for this lies in the fact that the total supply of land is relatively fixed and in general cannot be augmented in response to higher prices or diminished in response to lower prices (refer box 1). However, to the extent that the supply of land for a stated purpose has been circumscribed by

⁴ See, for example, Lipsey (1983), pp. 374-5; Samuelson (1980), ch. 28; and Wonnacott and Wonnacott (1986), pp. 734-6.

zoning, that supply can be altered by administrative means (that is, by a change of zoning).

The term ‘unearned increment’ is unfortunate – some of it is ‘earned’ and some of it is pure economic rent. As noted in box 1, capturing these rents is no simple matter. In deciding whether or not it is ‘fair’ for landowners to appropriate the ‘unearned increment’, it needs to be borne in mind that as in many other commercial ventures, developers invest and take significant risks, and capital gains or losses may result. The ‘unearned increment’ is not markedly different from capital gains made and lost in many other markets – the stock market perhaps being the most obvious example.

It is also worth considering that when land speculation (in pursuit of the ‘unearned increment’) is performed by private sector agents, they have a powerful incentive to consider both the costs and benefits of their actions. Mistakes are borne by the speculator, whose income expectations are not met. They are thus confined to timing, and loss of speculators' profits, and not to land use. Mistakes by government land developers can have wider effects and may be difficult to reverse.

Box 1: Taxing the ‘unearned increment’

Taxation of land rent has had enormous appeal in the past. The peak of its appeal occurred about 100 years ago, when the ‘single-tax movement’ led by the American economist Henry George commanded great popularity. George’s book *Progress and Poverty* is – as books on economic issues go – an all time best seller. It pointed out that the fixed supply of land, combined with a rapidly rising demand for it, allowed the owners of land to gain from the natural progress of society without contributing anything. Along with many others, George was incensed at this ‘unearned increment’ from which huge fortunes accrued to landlords. He calculated that most of government expenditure could be financed by a single tax that did nothing more than remove the landlord’s ‘unearned increment’. A further appeal of taxes on land values arises from the fact that economic rent can be taxed away without affecting the allocation of resources. Thus, for someone who does not wish to interfere with the allocation resulting from the free play of the market, the taxation of economic rent is attractive. But two problems arise with any attempt to tax economic rent. First, the theoretical statement refers to *economic rent*, not to the payment actually made by tenants to landlords. *What is called rent in the world is partly an economic rent and partly a return on capital invested by the landowner* [emphasis added]. The policy implications of taxing rent depends on being able in practice to identify *economic rent*. At best, this is difficult; at worst, it is impossible.

The second problem is a normative one. If, in the interests of justice, we want to treat all recipients of economic rent similarly, we will encounter insurmountable difficulties because economic rent also accrues to factors other than land. It accrues to the owners of any factor that is in fixed supply and faces a rising demand (Lipsev 1983, p. 374).

Assessment of government land wholesaling

Where developers are competing for zoned land, competitive bidding will mean that the land trader or owner will capture much of the rent. Government (and other) land developers may be able to appropriate some of the ‘unearned increment’ by purchasing land far in advance of it being zoned for urban use. Where a government agency purchases land at or near its agricultural use value, there are essentially two options available to it:

- it could appropriate the (unearned) urbanisation increment for the provision of infrastructure when it sold the land; or
- it could forgo the increment and sell the land at a price close to its raw land value (that is, at agricultural use value).

An example of the first approach is the recent land auctions in the Australian Capital Territory. The NCPA compared the \$29.3 million return with Australian Valuer-Office estimates of grazing land prices in the Canberra sub-region (that is, Yass and Gunning, which are free of subdivision potential). It said that had the land been sold at these grazing land values the auctions would have realised

\$540 000. The difference of \$28.7 million (over \$6000 per allotment) was appropriated by the Australian Capital Territory Government and therefore available for infrastructure or other purposes.

These estimates are questionable. In a rising market, or one in which the Australian Capital Territory Government underestimated demand for land, it would be unreasonable to attribute all the difference between the 'estimated' raw land value and the selling price as betterment – there would be scarcity rent involved. Furthermore, the acquisition of land for urban use would induce existing landowners to reasonably seek some compensation for disturbance and relocation costs in the selling price.

Nevertheless, the NCPA estimated that:

If the betterment margin created by the presence or promised delivery of social infrastructure is assumed to be of the order of \$5000 per lot in major urban centres, some \$300 million to \$400 million in potential infrastructure investment funds is forgone each year Australia wide (Sub. 65, p. 15).

Even putting aside problems with the estimation technique, the relevance of the 'special case' for the Australian Capital Territory to an Australia-wide scenario is doubtful. Elsewhere, most of the assumed \$5000 per lot would have already been captured incrementally over a series of transactions. Moreover, had the land in the Australian Capital Territory been in private ownership much of the 'unearned increment' could reasonably be argued to be a return on the capital invested for many decades.

For most cities, land prices on the fringe have already closed on urban values, suggesting that any windfall gain has already been captured (and possibly realised). Most non-reserved land near cities is in private hands with valuations compatible with or reflecting the likelihood of urban development.

Indeed, Landcom said that, while one of the original objectives of the New South Wales Land Commission was to capture the unearned increment in land value 'which was thought to occur as a result of rezoning', this objective has in practice had little relevance, as the unearned increment is often negligible, 'particularly in low priced areas' (Sub. 150, p. 6). In its view:

Under recent area planning and rezoning constraints it is generally considered that the unearned increment is eliminated by risk factors and holding costs. In addition, the alternative use value of fringe area land (eg rural residential) is often equal to or greater than its value for urban development (Sub. 95, p. 7).

This does not negate the notion that in principle land banking could be used to capture the 'unearned increment' (that is, the return on capital and pure economic rent). The activities of the SAULT indicate that it may have done so. However, there are a number of cautionary considerations.

First, experience indicates that the private sector does not engage extensively in land banking. This suggests that the ‘unearned increment’, even if captured, may not represent a good return on the capital invested. Private sector land bankers have been ‘caught out’ and the public sector is not immune to these losses. For example, as the Tasmanian Farmers and Graziers Association said:

The best known example of a ‘land-bank’ scheme of any magnitude in recent times was undertaken by the Albury-Wodonga Development Corporation ... The result was a non-strategic land-bank holding that surpassed the ability of the Corporation Officers to manage it; some very unusual ‘leasing’ arrangements; and when the funds ultimately dried up (as they were bound to do), a huge investment in a very unwieldy portfolio of land largely in the wrong areas and unsuited for their new contracted horizons (Sub. 6, p. 8).

At the draft report hearings the Office of Local Government said that it is not correct to suggest that the officers of the Corporation are unable to manage the land holdings. It said:

A large part of the Corporation’s land holdings have become non-strategic progressively as a result of Governments’ decisions to: avoid coercive regional development policies to locate people in certain areas; change away from the Canberra model of land development ... The lands now classified as non-strategic are being disposed of gradually to avoid flooding the market and depressing prices ...

The OLG nevertheless concluded that:

... there is no experience in Albury-Wodonga which supports land banking on economic grounds (Sub. 139, appendix 1).

Second, for the public sector, land banking implies the commitment of large amounts of taxpayers’ funds for the long term. The ULA stated that wholesaling is a longer term initiative and argued that:

A wholesaling role can only function alongside a retailing role which funds it unless government is prepared to inject on average \$10 million per annum into the program in Melbourne (Sub. 97, p. 3).

However, for Adelaide the SAULT manages a land wholesaling function without a major retailing role – it is limited to land development through joint ventures – and is largely self-funding and debt free (Sub. 161, p. 21). Nevertheless, even without recurrent demands for injections of public funds, government land banking and land development mean that large amounts of public funds are locked up in land holdings, often for the longer term.

Third, using land banking as a price stabilisation measure may conflict with the objective of lowering prices. As more resources are devoted to holding stocks, then less may be available for development. Where development is slowed owing to lack of funds (or indeed, to suit the staged timetables of infrastructure providers – see chapter D1) land price inflation may result. Moreover, were a

government agency to achieve lower prices within its development area, this could create localised distortions in land markets. Such distortions could adversely affect other development sites (particularly those close by) and the disposal and assembly of land for further development.

Land banking may also result in governments effectively steering development onto their own sites at possible cost to efficient development; staged release of banked land to suit the infrastructure provision plans of governments can create land shortages and force up land prices.

Fourth, the use of public monies in what is effectively ‘speculative land purchases’ involves some degree of risk. This does not seem to be an appropriate role for government. Jennings Housing noted that:

... the development business involves venture and risk capital, and I have never known a government that has put out a prospectus to subscribe for venture and risk capital. I think the ratepayers and the taxpayers assume that it's going to provide benefits and services and not be gambled (DR transcript, p. 239).

Finally, there are also doubts about whether a government land developer would forgo the ‘unearned increment’ even if it could. Landcom said that its:

... current policy is to sell land at current market value ... Any unearned increment could only be passed on to purchasers if prices are ‘discounted’. A general policy of discounting prices would have the undesirable effect of forcing private developers out of the market (Sub. 95, p. 7).

The SAULT may have sold discounted blocks (see Golden Grove joint venture – box 2) but this is difficult to determine from available financial data.

The NCPA argued that the value added arising from legitimate infrastructure subsidies ought to be subject to a betterment tax, with other apparent windfall gains arising from speculative trading in land being treated no differently from similar gains in other markets. It said:

The fact that governments have, and are likely to continue to deliberately subsidise a significant proportion of urban infrastructure *does* distinguish the raw land market from most other asset markets ... it is possible to sustain a risk free gain deriving simply from geographic circumstance rather than conscious investment planning (Sub. 131, p. 14, emphasis in the original).

In effect this is a proposal for a capital gains tax system employing differential rates – one for gains made through normal speculative trading and a higher rate for what NCPA characterises as a risk free gain arising from the provision of subsidised infrastructure. Taxing the subsidy away is a roundabout way of doing this: the more direct way would be to avoid the subsidy in the first place.

Another way of capturing these rents is said to be through developer charges, which governments around Australia are using more frequently. While there is

evidence that developer charges may be passed on to the purchasers of developed allotments, the key point here is that developer contributions reflect actual costs incurred in the provision of infrastructure services (and not a levy on profits) when a new development is established. Therefore, charging developer contributions is an efficient policy irrespective of concerns about any ‘unearned increment’ (refer part B). Only if such charges are eventually passed back to landowners will they be funded from their ‘unearned increment’.

Niche market (lower end) price effects

Putting to one side the question of whether government participation in the land market can influence prices across the board, it is clear that government agencies can provide lower-priced land in localised developments. But whether this can have a spillover effect on prices across the low end of the market is disputable.

The UDIA said that government land developers cannot deliver cheaper land and that there is no advantage to the community from their operations. However, it added that:

... they haven’t forced our sales down. They forced us out of certain markets (transcript, p. 519).

While this might suggest that government land development can provide cheaper housing in some markets, Landcom said that it:

... does not undertake any operations aimed at ‘pricing out’ private developers. The general approach of Landcom in moderating prices is by way of a supply side solution to meet otherwise unsatisfied demand particularly in the first home buyer markets (Sub. 95, p. 6).

This was echoed by the ULA. It stated that private developers in Melbourne were developing 700 to 800 square metre house and land packages retailing from \$95 000, whereas the ULA had a wider range of product with 500 square metre house and land packages selling for around \$85 000. It believes this has created an impression that it has exerted downward price pressure, whereas in reality it is selling a different product.

At the draft report hearings, Homeswest – which targets much of its lot production at the first home buyer – disputed that the private sector would adequately provide for this part of the market in Homeswest’s absence. It cited the example of Armadale, a first home buyer area where Homeswest had ceased

activity, and said:

... we now have agents ringing us and saying, 'please come back to the market because nobody else is providing land in this area for that particular target group' (DR transcript, pp. 7-8).

While government land developers state that they are reacting to the private sector moving up market in search of higher profits, it may well be that their own focus precipitates that action. Indeed, the threat of competition or the knowledge that government land developers may crowd out the bottom end of the market may influence private developers to vacate that market – particularly where government developers have a significant market share, such as Landcom's 37 per cent of the total low end market around Sydney.

Indications that government agencies have delivered cheaper housing in certain developments sometimes need qualification. For example, the ULA said in its Annual Report that it sold 1000 blocks (constituting 70 per cent of its sales) at a discount of \$10 000 through its Homestart scheme in 1990-91. On face value this appears to provide substantial assistance to eligible first home buyers. However, ULA stated that it must sell in line with minimum prices set by the Valuer-General. Apparently, the Valuer-General's minimum prices were six months behind those prevailing in the falling market. The ULA, being unable to sell below the determined minimum price, initiated the Homestart scheme to quit stocks in an environment where private sector prices were falling. This indicates that the ULA blocks were in fact 'discounted' to market value.

Nevertheless, during the 1987-89 boom, the ULA doubled its market share from 10 to 20 per cent of the market to restrain price increases. In its development at the northern (Merri) Corridor prices rose by about 22 per cent. Prices in the adjoining northern Plenty Corridor, where the ULA did not have a presence, rose by about 88 per cent over the period.⁵ The ULA further claimed that its presence caused a 'ripple effect' constraining the prices paid for broadarea land in the vicinity of a ULA development.

Homeswest said that its focus on the first home buyer market is evidenced by the average price of its land:

In 1990, Homeswest's average lot price was \$35 000, compared with an average of \$48 900 for land sold through [the Real Estate Institute of WA] multilistings. In fact some 80% of the land sold by Homeswest was below \$35 000 (Sub. 57, p. 2).

⁵ These aggregate raw price data provide no indication of the desirability or amenity value of the two developments nor whether allotments were comparable in terms of size.

These data could suggest the sale of discounted land, although Homeswest notes that:

Despite the emphasis on affordability, sales are made at a market rate and above cost to the government (Sub. 57, p. 2).

On balance, it would seem that government land developers are delivering a 'cheaper' product mainly through operations at the low end of the market and sales of small blocks. However it may also reflect their taxable status. For example, Homeswest is exempt from paying land (and company) taxes, and while it is required to pay local rates, it has a two year exemption under its Act for broadarea purchases. Were these same conditions applied to private sector developers, they may also be able to provide cheaper blocks to satisfy more first home buyers.

Equally, were the taxation revenue which is currently forgone to be applied as a direct subsidy to particular target groups, it could be more cost-effective as a way of meeting social objectives than current arrangements. Certainly it would be more direct and capable of better targeting. However there are difficulties of intergovernmental taxation revenue which would first need to be addressed. Company taxation forgone is a Commonwealth matter, while land tax forgone is of direct concern to the revenues of the States.

There may also be undesirable social implications from an approach in which low-cost residential areas are developed as a whole. Indeed, many public housing bodies have adopted an explicit policy to spread housing for their clients throughout a development area rather than establishing concentrated areas of low cost housing. This is a feature of the Golden Grove joint venture. However, in other areas the locational choices of those who are eligible for assistance may tend to be limited to government estates, particularly if government activity has crowded out the private sector at the lower end of the market.

2.4 Other objectives

Coordination and planning

These objectives were outlined in the previous chapter. Several government land developers argued that they – as government agencies – were better able to coordinate with other government agencies providing roads, water, sewerage etc, leading to better outcomes than if private developers only were involved.

While it may be that government agencies can successfully coordinate with other government agencies within their State or Territory, coordination and planning can also be achieved where land development is in private hands. After all, most

land development is privately handled, and one of the skills of a developer – government or private – is the ability to coordinate the supply of labour, equipment and services to particular locations and at particular times. Coordination does not require government agencies to act as principals in land development (see also chapter B6).

Moreover, government land development activities should not be seen as an alternative to better pricing of infrastructure, along the lines outlined in part B. It is an unnecessarily blunt instrument for this purpose, when compared with efficient pricing of infrastructure facilities and services. As the UDIA intimated, the desire to coordinate and plan the provision of infrastructure through land supply control can conflict with price lowering and stabilisation goals (see chapter D1). Neutze (1978) – while keen to see effective land use planning systems in place – cautioned that:

... when the areas of land available for housing and other urban uses are restricted by land use controls in order to economise on the cost of providing urban services, high land prices can influence the price of housing ... (p. 202).

Promoting urban consolidation: innovative or higher risk projects

An emphasis by most government land developers on urban consolidation is apparent from the following statements of objectives:

... promote and assist with the Government's urban consolidation objectives as appropriate (SAULT 1990, p. 6).

... implement projects and techniques that give effect to State Government policy to increase residential densities and assist in consolidating the metropolitan area (ULA 1991, p. 13).

One method of more efficiently using land resources involves redeveloping inner urban areas which are already well serviced by both physical and social infrastructure ... (Homeswest, Sub. 57, p. 3).

The Golden Grove joint venture (see box 2) highlights the use of smaller block sizes. Similarly, the ULA has, over the past few years, increased its lot yield on its estates by about 30 per cent. It has achieved yields of up to 18 houses per hectare in Werribee, Broadmeadows and Berwick. About 30 per cent of Homeswest's building program is met through the consolidation of existing urban sites.

The Golden Grove and the high lot yield ULA development areas comprise higher density fringe development. This represents an alternative form of consolidation to urban infill.

Box 2: A joint venture: the Golden Grove development

In 1984 the SAULT and Delfin Property Group established a joint venture to develop a community at Golden Grove on a 1230 hectare site of SAULT land 18 kilometres north-east of Adelaide. This was the first major urban development project undertaken as a joint venture between SAULT and a private developer. SAULT's role has been to provide raw land, contribute to the overall direction of the development and coordinate the provision of social infrastructure.

Prior to the joint venture proceeding, the conditions of the venture including the financial arrangements (which are confidential) were subject to government review. This recommended a number of changes to incorporate the Government's aims and objectives as the focus of the joint venture's operations and to provide protection for the Government's interest. These changes were incorporated into the *Golden Grove (Indenture Ratification) Bill 1984*.

The SAULT said that the joint venture provides an opportunity to meet social objectives in a manner not possible if the broadarea land was sold to private developers. For the private sector:

... the potential for profit is attractive ... political certainty and creative financial structuring reduces risk (SAULT paper on the joint venture).

As the land remains in government hands until allotments are sold, holding costs are diminished. New housing forms have been promoted – for example, Delfin's courtyard housing on 450 square metre lots and 'villa' housing on 300 square metre lots. Social infrastructure services are provided up-front and residents are said to benefit from lower land prices. Between 25 and 30 per cent of all land is made available to the South Australian Housing Trust.

The SAULT receives a payment for its lands over the life of the project and also receives half of all profits that are made through the joint venture (transcript, p. 134). Both joint venturers over the past seven years have reinvested all profits back into the project, and the joint venture has advanced an interest free loan of \$8 million to the South Australian Government to enable the combined secondary schools complex to proceed (Sub. 108, p. 2).

The Golden Grove development is about 70 per cent complete and will eventually contain around 30 000 inhabitants (DR transcript, pp. 136, 138). It is cited by many as a good example of how residential developments should be established; that is, with a blend of high and low density housing, multiple use facilities such as schools, well coordinated and established infrastructure and social amenities.

However, there has also been some criticism of the project. One construction company (Homestead) argued that the development has been funded at a high cost to the taxpayer. It said:

The State Government has expended millions of dollars into the Golden Grove project for roads, water supply, sewer and electricity, etc. for services which should have been funded by the developer – as is the norm. As a result of the artificial cost structures which drive the Golden Grove project, the level of amenities provided to the ... people who will live in Golden Grove has created ... resentment amongst the 80 000 people in the surrounding suburbs (Sub. 93).

At the draft report hearings the SAULT said:

... in terms of the provision of services and roads, etc, all of the normal subdivisional costs are met by the joint venture, as would any other private developer. Indeed the Golden Grove joint venture is meeting very much more in terms of the provision of extensive landscaping, not only of roads, including the arterial roads, but also of reserves that are maintained in the area (DR transcript, p.134).

SAULT went on to say:

... the joint venture is required to contribute 0.45 per cent of the sale price of each allotment (matched by the Tea Tree Gully Council) into a Community Trust Fund for the provision of community services (Sub. 108, p. 2).

Delfin noted that infrastructure costs per allotment are higher at Golden Grove because of the extent of social infrastructure provided (which was part of the arrangement).

Efficiency will only be improved by attracting a greater range of purchasers at a greater rate to one location – to do this, upfront investment in community infrastructure is required (Sub. 98, p. 3).

Homestead criticised the SAULT for engaging in private treaty land deals, and advocated disposal of government land through public auction. The SAULT stated that it has disposed of broadarea land by public auction, private treaty, joint venture and tender. The mechanism chosen is said to depend on ‘market conditions’ at the time of disposal. Nevertheless, the Government has indicated that it is likely that future sales will be by public auction.

There is particular merit in the use of public auction for the disposal of public lands. It ensures that the process is efficient and transparent, and that governments are seen to treat all developers equally. It also ensures that taxpayers receive an appropriate return on the land for which they are effectively shareholders.

Government land developers are presumably pursuing higher density developments to meet the affordability needs of their client group (that is, at or near the bottom end of the market). The ULA however, considered that it had a broader educational and demonstration role to counter the reluctance of the private sector to pursue higher density developments.

Some have argued that private sector land developers are not innovative in land development and will not take risks in this area. They argue that the private sector is slow to initiate change and that the introduction of desirable changes is sped up by government demonstration projects.

The ULA acknowledges that its demonstration projects show low profitability, but it seeks to lead this field and educate the community. It believes that it can generate demand which will ultimately open up opportunities for the private sector. Green Street demonstration projects attempt to achieve the same objective.

Homeswest said that the planning authorities in Western Australia look to it to undertake pilot projects of an innovative nature. Brisbane City Council said:

There is a strong justification for government involvement in land development to demonstrate the benefits of innovative practices and techniques with a view to supporting broader strategic objectives, eg early Green Street projects carried out by governments or by governments in joint venture with the private sector have demonstrated the benefits of this approach to housing development and served to resolve practical and procedural issues in a way that the private sector would generally be reluctant to do (Sub. 117, p. 11).

Equally, some private developers argue that the private sector can be innovative. Leagh-Murray and Tait said:

In Queensland, it is the private sector that has led the way with *Green Street* developments. There is little evidence of Government led development initiatives superseding the capacity of the market to deliver innovative housing products. Small blocks, when provided by Government, are highly subsidised and the truth of this subsidy hidden from the community (Sub. 127, p. 9).

It is not clear that a demonstration role is warranted. It does not require a public land development function to achieve urban consolidation or renewal objectives. Indeed, such outcomes can be observed in all capital cities irrespective of whether or not there is public land development and what role it takes. There are numerous examples of private enterprise higher density dwellings both within the inner zones and on the fringes. As land prices and the costs of development rise, the incentive for developers to demonstrate the benefits of living on smaller blocks also increases. Government land developers are driven by affordability motivations which may be more readily met through higher density developments. However particular difficulties would arise if these types of development were subsidised to entice homebuyers into higher density occupation.

Land development processes should be sufficiently flexible to meet the needs of prospective home purchasers whether for high or medium density living or for standard single dwelling allotments. Cost recovery practices for infrastructure, access to social services, travel times and lifestyle and amenity considerations all have a role in shaping outcomes.

While it is understandable that private developers will generally aim to meet consumer demands for typically large blocks, other parts of this report have suggested that lack of innovation or a disinclination to build different forms of housing on, say, smaller block sizes may be more a reflection of existing impediments faced by builders and developers. Examples include local government restrictions or community resistance to medium density housing, and possible differences in labour conditions and costs because of industrial arrangements in medium density housing construction.

If this is so, then reviewing and if need be modifying any such impediments would be an appropriate response. Peet and Company noted that:

... there has been some good innovation by the government sector. However, to a very large degree the lack of variety that we have had hitherto has been as a direct result of government regulation ... which said that lot sizes will be a minimum of x, setbacks that will be a minimum of y ... some of the various arms of government have played a successful role in convincing ... regulatory bureaucrats that they should change things (DR transcript, p. 66).

Development approvals and controls are discussed in more detail in chapter D3. Labour conditions are discussed in chapter D4.

Maintenance of employment

Some government land development agencies have sought to maintain employment through their activities. For example, the ULA increased output when private sector development rates halved last year. It said:

This is the ULA's countercyclical development function to maintain employment in the consultants/contracting/home building industry during recessions. This 1991-92 percentage share, ie 30%, is the highest it has ever been and ULA would normally see its role between 10% to 20% (Sub. 97, p. 1).

While this may only be a secondary objective, it constitutes assistance not available to other sectors of the economy. The objective itself is open to challenge but even if it were accepted, it could be achieved more directly.

Commissioner John Mant (1992) in his study of Landcom made similar points. He noted that assistance to the building industry was one of Landcom's six corporate goals, but argued that Landcom's rental housing operation:

... should not continue to be seen as an attempt to support the building industry ... If the Government wishes to assist the building industry from time to time, then it should find other ways of doing so. To perpetuate a primary role of assisting the industry will continue to harm tenants and will deny opportunities to obtain assets which provide the best value for money (p. 8).

2.5 Financial arrangements and performance

The land development agencies in different States and Territories vary in the range of their activities and in how they are funded.

Landcom was conceived in 1986 when the former Lands Commission (Landcom) and the Housing Commission in New South Wales merged to form the Department of Housing (the retail arm still trades under the name of Landcom). A business plan indicates expected cash surpluses for the years 1990-91 to 1996-

97 (a full market cycle). However, Landcom said that these estimates exclude the real and opportunity costs of land banking.

Landcom said that by allocating a proportion of overall debt on a notional basis it can be shown to be self-financing without the need for start-up funding, cash injections or free allocations of land. On the subject of its return on taxpayer funds, Landcom stated:

The department is continuing an exercise in 1991-92 to establish a separate accounting system for its commercial operations including Landcom. Until this exercise is complete it is not possible to determine accurately a rate of return on funds employed even though they are currently nominated as performance indicators (Sub. 95, p. 4).

It added that it operates at break-even or better for every project, but that margins are low, owing to the nature of the low end of the market. Landcom is exempt from stamp duty on acquisition, land tax and local council rates on vacant land (these matters are taken up in part C). It does incur holding costs on its land bank (that is cost of borrowing, maintenance and water charges).

In Victoria, the *Urban Land Authority* received an initial interest free loan of \$25 million from the Commonwealth in 1975 which was repaid ahead of schedule. It has not received a free land allocation or any further cash injections:

It receives no financial benefit from its operations and must charge all normal development costs, any interest on its own borrowings, stamp duty, land tax and must follow all processes that the private sector follows. Of course, it does not pay company tax, as such, however, over the last two years the State Government has required a dividend 'payment' to be paid into an urban infrastructure fund. This has totalled \$19 million over the last two years ... (Sub. 97, p. 1).

The ULA said in some markets it achieved a rate of return of 20 to 35 per cent, whereas in others such as its higher density demonstration projects it accepted lower rates of return.

The *South Australian Urban Land Trust* also received start up funding but it is not clear if this has been repaid. It said that its rate of return was confidential but that it had paid a dividend of \$4.5 million in 1990 and \$8 million in 1991 to the State Treasury to be used for financial assistance for community facilities. The SAULT derives income by leasing its land for agricultural purposes. At present it leases out about 98 per cent of its holdings. It does not pay land tax.

The SAULT currently has about \$65 million in undeveloped land and about another \$19 million in joint venture developments. Its total assets exceed \$108 million. The ULA has nearly \$160 million of assets of which about \$80 million comprises undeveloped land inventories.

Homeswest is predominantly self-funded, relying on income from land sales. It receives no funding from the State government (other than \$650 000 for certain

Aboriginal housing). However, it does receive \$100 million each year from the Commonwealth, in the form of a tied grant under the Commonwealth-State Housing Agreement. It is exempt from paying taxes and has a two-year period of exemption from council rates.

LandCorp is entirely self-funded and has no normal recourse to government funding. However, it does have government-guaranteed borrowing capacity. LandCorp does not pay any rates or taxes.

It is apparent that much capital is tied up with the activities of these government land agencies. But it is difficult to obtain a clear understanding of what performance criteria are used, and whether they are met.

2.6 Conclusions

Government land developers vary across the States in terms of their scale, role (retailing or wholesaling), operations (developing, building, joint-venturing) and their focus. To be effective in meeting an affordability objective, they would need to have an across-the-board influence in lowering and stabilising prices – otherwise they simply become agents for delivering selective assistance to beneficiaries who happen to be, in the main, first home buyers.

The Commission found little evidence that a retailing role has stabilised or lowered developed land prices across-the-board. Similarly, the potential for land banking to achieve price reductions through capturing (and either appropriating or forgoing) the ‘unearned increment’ was found to be at best a very long term strategy. The activities of the SAULT suggest that it may have appropriated some of what is perceived to be the ‘unearned increment’ in the past. However, given the long term nature of the capital tied up in SAULT’s land banks, part of this should be seen as providing a rate of return on that capital. This also raises a broader question about whether government land holdings constitute a good use of taxpayers’ funds, given that land markets have over a long period of time shown themselves capable of responding to changes in demand for land for different purposes. Indeed, most States do not now engage in land banking, and some are not involved in residential land development as principals.

Government land developers themselves state that they do not attempt to compete with private developers, but merely to fill a void at the lower end of the market. Were government land development agencies not specialising in this end of the market, private developers would have more incentive to work to meet this demand. The fact that at present they often do not may be more a reflection of the taxation and other advantages accruing to the government agencies which develop residential land. Put another way, if private developers were accorded

the same taxation and rating treatment as government agencies, it would be surprising if they could not deliver lower-priced housing.

This point also underpins some of the Commission's concerns about some of the other roles undertaken by government land developers. For example, if governments perceive a need for demonstration projects such as Green Street joint ventures, or to inform people about the housing options available in more consolidated urban forms, there are a number of ways in which this could be done without the need for the government to act as a land developer in its own right.

There is also a question about the appropriateness of government acting as umpire and player while operating in a commercial environment in which it grants itself privileges such as land tax exemptions which are not available to private participants. This is particularly important considering the general lack of transparency and sometimes imprecise performance criteria applicable to government land developers.

Some difficult equity issues

If government land developers are providing some allotments at less than market price, the beneficiaries are first home buyers, and the gains are capitalised into property values. Apart from the observation that not all first home buyers are in the market for new housing, or are on low incomes, it must be questioned whether people who are capable of raising a deposit and meeting the ongoing payments on a new home are more deserving than others for what would effectively be welfare assistance. At a minimum, any such benefits would be primarily relevant to people at income levels which are comparatively comfortable; the most needy in the community have their housing needs met, if at all, by other means.

The South Australian Government argued that the activities of SAULT benefit low income earners throughout the city:

Given the recognised spread of first-home buyers and low income earners across the whole of metropolitan Adelaide, it can be argued that if the effect of government land banking is to keep housing in general affordable, then low income earners everywhere and not just on the fringe benefit (Sub. 161, p. 20).

Those too poor to contemplate entering the market for a house, even at discounted prices, gain nothing from such policies. Indeed, Commissioner John Mant (1992) in his report on Landcom observed that the Department operates in an environment which sees:

... home owners and home purchasers receiving much of the housing benefit supplied by governments, with people in need in private rental receiving comparatively little assistance (p. 6).

Moreover, part C has shown that taxation policies of governments are already biased in favour of home owners (both wealthy and not so wealthy) and against those who rent. On the presumption that the poor have a greater representation among renters, this suggests a bias against them.

What is required as a first step is that welfare benefits in whatever form only accrue to those who qualify. This chapter has already shown that attempts to lower land prices (to the extent that this can be achieved) do not benefit the poor and in practice benefit homebuyers as a class. The cost of this approach is in terms of forgone opportunities for spending in other areas.

At the draft report hearings Homeswest said that the problem with various subsidisation schemes, particularly from the Commonwealth, was that these schemes have been sporadic and irregular. This no doubt reflects in part their comparative transparency.

The Commission's findings

The Commission sees little potential for government land agencies to reduce the instability of land markets or to provide land at prices significantly below those which would prevail had the development been in private hands and subject to the same taxation treatment.

As a general proposition, it is more efficient and just for governments to utilise taxation laws and the social security system to implement social welfare objectives. Interfering directly in the workings of the land market is an ineffective means of achieving such objectives and provides no guarantee that target groups will be the main beneficiaries.

Much capital is tied up with the activities of government land developers. It is difficult to obtain a clear understanding of what performance criteria are used, and whether they are met.

Further review is warranted

The Commission has not obtained sufficient information to evaluate the performance of State and Territory land development agencies. The New South

Wales Government is currently reviewing the activities of Landcom following a report by Commissioner Mant.

The Commission recommends that all State or Territory governments which are engaged in land banking or other land development activities establish reviews to:

- **determine, and publicly specify, which social objectives they seek to achieve;**
- **identify the nature and extent of concessions which agencies receive through taxation and other means;**
- **assess, and make public, the rates of return on capital invested on the community's behalf; and**
- **evaluate alternative options by which government objectives might be met.**

If direct government involvement in land markets is to continue, detailed performance criteria should be specified for the relevant agencies. These should include valuation methodologies for land assets, and the calculation of rates of return on assets. Procedures (including land sales mechanisms) should be fully transparent, with provision for regular review of the impact of such activities on the groups identified as needing assistance.

D3 DEVELOPMENT APPROVALS AND STANDARDS

Development controls can vary markedly between local council areas. The need to balance development and redevelopment against the interests of existing residents represented by local councils, and rapid changes in forms of housing, have worked to extend the time taken in the process of development control.

Achieving an appropriate balance between development, health and safety and the interests of third parties affected by development is difficult, but problems have been recognised and changes are underway. Land use and building regulations appear to be moving towards more flexible practices incorporating performance standards.

The link between the broader strategic and regional plans discussed earlier, and planning at the local government level where many operational decisions are made, is not always clear.

The NHS expressed concern that goals and standards can vary greatly within a single municipal area and in some cases a dwelling or land use may be permitted in one local government area but prohibited in an adjacent one. It was also concerned with what it termed ‘discriminatory rules’. For example, some local governments require the concurrence of neighbours before two town houses can be built on one site, yet no such consent is required to construct a two-story detached house. Some of these issues raise broad questions about the respective roles of State, Territory and local governments.

However, some other problems said to occur at the local government level may be more tractable. These include delays in obtaining approvals for developments other than detached cottages, excessive design standards and a lack of flexibility in building standards, including requirements for open space and playgrounds; and rules about neighbour consent and third party objector rights.

3.1 Complexity in building regulation

There are some 1400 Australian standards applicable to building work, excluding infrastructure and engineering work. Recent inquiries into the building industry have found regulations and standards to be complex and difficult to read and understand. This causes confusion amongst users and contributes to inconsistent and conflicting interpretations by regulatory authorities.

Under Australia's building regulatory framework each State has responsibility for legislating and implementing the controls that regulate building construction within its boundaries. Consequently, there are eight separate frameworks for regulation of the building industry consistent with State and Territory statutes, regulations, codes and standards.

Not surprisingly, building regulations are not consistent from State to State and applications of regulations at the local government level vary widely within States. At the local level, there are instruments within which the operational rules and criteria for regulatory activity are set out. They include planning schemes, by-laws, codes and regulations developed within the parameters set out in the State legislation. Other bodies, with different legislative mandates, may also become involved in matters such as fire safety, water supply, sewerage, heritage values and environmental considerations.

Thus, Australia does not have a consistent system of development controls, but a multi-tiered, often ad hoc and uncoordinated approach with each level of government controlling different aspects. The various tiers operate independently, often applying different criteria for similar developments. The existing system of regulation has developed a variety of forms, procedures, practices and relationships that appear to have made the development approval task costly and time-consuming.

This fragmentation of regulation increases complexity, imposes additional costs on government and consumers and adds to delays in the administrative process. This need not necessarily suggest that a uniform set of development codes is warranted. There are clear reasons why there may be differential standards between States (for example, standards cognisant of events such as cyclones or earthquakes). Moreover, it is proper that elected local councils should have some say about development and its impact on heritage and residential amenity within their jurisdictions. These issues are taken up below.

3.2 Delays in approval processes

Local government approval processes are said to respond sluggishly to changes in market conditions. Specifically, it is argued that it is very difficult and time consuming (and therefore costly) to obtain approval for medium density and more innovative forms of housing. A higher rate of return on investment is therefore needed for projects which have a likelihood of meeting local government resistance or incurring delays in the approval process.

According to the IPC, developers identify the key conflict areas which cause delays as:

- council procedures;
- processing difficulties within the planning department;
- opposition to development proposals by residents;
- insufficient delegation of decision making to council staff; and
- lack of clear guidance from council planners.

On the other hand, local government planners identified a different set of problems, namely:

- inadequate information supplied by developers when lodging applications;
- lack of knowledge amongst applicants of planning controls and processes;
- applications which do not comply with council policy;
- insufficient pre-lodgement consultation; and
- an applicant's failure to respond to requests for additional information (see IPC 1992, p. 12).

The IPC (1991b) noted that:

... a very wide range of times were required for similar projects to be assessed and determined. The factors that explain this are differing practices between the approving authorities, variable performance by reviewing officials and variable quality of development applications ... These factors help explain why land developers confine their activities to specific geographic areas and why few operate at a national level (pp. 5.1-5.2).

There are a range of other factors which have a bearing on development approvals. As with any rules based system, broad interest groups arise, in this case, planners, developers, arbitrators and third parties. For example, in New South Wales the *Environmental Planning and Assessment Act* attempts to balance the various competing interests. But court action is expensive and time consuming. Sorensen (1992), citing New South Wales Public Accounts Committee reports, said that many councils are paying large sums of money defending or bringing court cases to the Land and Environment Court. North Sydney reportedly spent over \$800 000 on legal expenses in 1989; and Coffs Harbour spent \$228 000 in 1990 on four cases.

Local council members are answerable to their electorate. Prospective councillors may stand on a platform of protecting the heritage and character of their constituency, or a pro-development stance may be adopted. Indeed, some councils are reputed to alternate between 'pro-development' and 'anti-development' stances from one election to the next. Because of this, developers may be frustrated in attempts to develop in certain areas but this would seem an unavoidable by-product of the democratic process at work in local areas.

Another problem raised by the IPC, NHS, OLG and developers concerns an apparent inability of current zoning rules, use rules and building codes to come to terms with innovation in medium density housing. This is discussed below.

As noted in D1, a need for greater flexibility in standards and regulations has been identified by governments at all levels. Some changes are occurring and they are reported below.

Costs arising from approval delays

The NHS noted that delays in development approvals can significantly increase holding charges for developers reflecting the opportunity cost of resources tied up; interest charges; inflation in construction costs; management time associated with dealing with regulatory authorities; and commercial disadvantages of late developments.

However, opinions about what constitutes a reasonable time frame for development approvals, and hence the perception of delays, vary – for some, any time taken in seeking approval constitutes a delay. On the basis that a delay represents time taken which is in excess of normal approval times, an OLG (1990) analysis indicates that:

- 25-30 per cent of building applications experience delays averaging seven days;
- 30 per cent of development applications experience delays averaging 30 days; and
- 50 per cent of multiple and complex applications experience delays of 40 days or more (p. 22).

These delays were said to add between 5 to 10 per cent to development costs. But not all of these delays can be attributed to the regulatory system – in many cases developers provide inadequate information. For example, Falk (1987) suggests that poorly prepared submissions by developers could be responsible for 25 per cent of delays.

Nevertheless, the OLG estimates that even if only 30 to 40 per cent of delays are sheeted home to regulation, the cost to the development industry would be between \$350 and \$450 million per annum. Moreover, if approval systems were modified to reduce processing times by 20 per cent there would be further savings of the order of \$300 to \$400 million per annum.

The problem of delays in approval processes appears to be far more acute for medium density housing:

A number of firms surveyed specified that 60 days were not unusual for medium density development, and longer if a case went to the Administrative Appeals Tribunal (AAT). By contrast, a national survey of all residential building approval delays found that some 60 per cent were processed within 30 days (Office of Local Government, 1989). Delays of this order are likely to add an estimated 4.5 per cent to the end cost of a development, representing some \$7500 on a \$150 000 dwelling (Tract Consultants 1990, p. 19).

A study of medium density housing in Adelaide by Woodhead (1991) provided a pointed illustration of the costs caused by delays incurred while third party objections are assessed:

A third party may appeal against a development proposal and there is no limit to the delay which may result from objections (which cost only \$20 to lodge and rarely bear costs to the objector in the event of the objections failing). One developer spoke of having 26 units held up for 6 months longer than anticipated. The cost incurred in interest charges for the land which cost \$550 000 was in the order of \$2100 per unit (p. 38).

Recent moves to strengthen mediation processes in New South Wales suggest that delays caused by litigation are being reduced by resort to a less costly and less complicated system of dispute resolution.

More broadly, builders argue that it is difficult to have new products and processes certified by the appropriate bodies and often there are different certification standards, and attitudes towards change, between local government areas. The NHS found that the adoption of new housing construction methods, new products and innovative dwelling types has been slow and as a result opportunities for reducing the cost of housing provision and improving the range of available housing have been lost. The regulatory environment has been tagged as a major impediment to innovation.

Local Approvals Review Program (LARP)

The LARP was established in 1989 and is designed to streamline the approvals system for local government. Its objectives include: reducing delays in approving land and building developments; providing an environment conducive to innovative development proposals in line with changing community needs and marketing trends; and enhancing consultation and communication amongst local government, State Government, industry and the community (Sub. 139, p. 11).

At the draft report hearings, the OLG said that it was endeavouring, through LARP, to improve the way in which local government deals with building and

development applications. It said:

Through LARP we have developed a better approval practices manual and in the last budget we were funded to commence implementation of LARP reforms in all States of Australia. That process has begun, there are now people on deck in all States who are working with local councils to improve their approval processes (DR transcript, p. 399).

The WA Municipal Association said:

Significant reductions in local government building approval times have been achieved in WA through Local Approvals Review Program (LARP) initiatives (Sub. 105, p. 2).

The Local Government and Shires Associations of New South Wales said it supports:

... the need to eliminate unnecessary delays in the development process – the Associations support the various federally-funded programs designed to minimise unnecessary delays. In particular, the LARP is enabling many councils to review their development approvals assessment procedures. The Associations believe that increased attention needs to be focussed on the unco-ordinated and antiquated referral and concurrence procedures if the gains in reviewing local assessment procedures can be translated into shorter processing times (Sub. 137, p. 2).

Development approval charges

A related aspect is the system of charging for development control – for example, for processing development proposals and providing building approvals. Statutory maximum fees and charges, such as those in New South Wales, bear no direct relationship to the time or skill needed to process an application. Nor do they reflect the wide range of emphases and detail apparent in different communities and their councils, which can lead to quite substantial variations in the project information required to be presented and the intensity of work required to assess it.

Concerns that charges do not relate to costs need to be balanced against the view that deregulation of statutory maximum charges will allow local councils to engage in monopoly pricing practices. Indeed the South Australian Government said:

Councils should not be free to set their own charges because some councils may charge much more than others for the same type and scale of development. In particular cases, high charges may be used as a means to discourage development and vice versa. A system of uniform application fees or a uniform scale of fees based on value are preferred (Sub. 161, p. 21).

However, public exposure and the scope for developers to apply in different jurisdictions should alleviate these concerns. Moreover, the deregulated fee

structure would be subject to the same sorts of checks as apply to other areas (for example, giving public notice of intention to make changes).

The Local Government and Shires Associations of New South Wales said it supports:

... the need to reform the charging process for development control – the current system is inflexible and does not reflect the costs incurred by councils (Sub. 137, p. 2).

The Commission considers that charging processes for development control are in need of reform. Councils should be free to set their own charges for services provided in the development control area, based on the costs incurred. In this way, developers and councils can more clearly ascertain what they are getting for services rendered and required.

While many participants agreed with this view, they added that the process for determining charges should be transparent. Leigh-Murray and Tait said:

Charges should be able to be independently verified to ensure inefficiencies are not just passed on through regulatory muscle (Sub. 127, p. 13).

Similarly, Jennings Housing said:

... the finding is supported provided that the method of applying the charges is clearly laid out and transparent and that it is available for independent audit (Sub. 124, p. 7).

It added that:

In determining the cost of development control, it is also important to isolate and remove from the equation the cost of running the planning scheme generally. Planning schemes are for the perceived overall benefit of the whole community and are intended to raise the overall amenity of all residents. This should not be confused with the actual cost of development control, and planning scheme management cost should be paid from the rate base (Sub. 124, p. 7).

The Commission considers that there is merit in the concerns raised by participants. **Any process of charging for the cost of development controls should be transparent and open to scrutiny.**

3.3 The costs of high standards

While high standards for facilities raise the quality of urban infrastructure, they come at a cost, and that cost reduces the affordability of urban living.

The OLG said that there is significant evidence that planning and engineering standards, particularly for residential sub-division, can be reduced without loss of safety or amenity. Examples include smaller nature strips, reduced pavement width, reduced pipe lengths for water and sewerage, reduced and variable lot

sizes and innovative layouts. The Office estimates that changes of this nature have the potential to cut development costs by 30 per cent.

Other studies have come to similar conclusions. For example, the Joint Venture for More Affordable Housing and the Australian Housing Research Council (1983) found the potential for savings of 30 per cent per residential lot; while the Committee of Enquiry into Housing Costs (1978) estimated possible savings of 36 per cent. This suggests that the total savings on a national basis could be of the order of \$100 to \$150 million per annum.

At the draft report hearings Barcrest Developments said that standards are being set without sufficient regard to cost. It said:

For example, the Association of Local Government Engineers has recently – in connection with other bodies – set stormwater drainage standards which have now been adopted on an Australia-wide basis. In fact it seems to fly in the very teeth of AMCORD, if adopted – and numbers of local authorities here are saying, ‘yes, that’s the new standard – we will adopt it’ ... therefore the engineer will never go below that for risk of professional negligence.

It added:

... that group of local government engineers who are looking at the matter from a very limited perspective, are setting standards which the community is paying very dearly for, ... Australia is burying money in the ground on a very questionable premise (DR transcript, p. 286).

Barcrest argued that before changes to regulations/standards that have cost implications, are introduced, there is a need for a review process to be available that has to be satisfied on the broadest community basis (Sub. 125, p. 5).

Leagh-Murray and Tait said that some standardisation of certain development controls was acceptable provided the standards are rational. Standardised codes can be excessive and when they are forced on developers this can make the development needlessly expensive (Sub. 127, p. 10).

Variability of standards

Variability of standards can needlessly create costs – a clear case being the thirty-odd different kerb specifications said by the NHS (1991d) to apply in Adelaide (p. 49).

The NHS (1991d) also found that variability of standards across local government areas can lead to increased costs (p. 49). Some State and Territory governments have implemented, or are implementing, codes to streamline development controls. The Department of Planning and Housing in Victoria has developed a multi-unit dwelling code to simplify medium density development.

The privatisation of some Council functions in relation to building and development controls may provide benefits in this area. Professional consultants employed to assess applications could involve positive spin-offs in terms of some pressure or recommendations to reduce variations.

Controls on medium density housing

Developers claim that restrictions have both limited the amount of medium density dwellings available and increased their costs. A study by Tract Consultants (1990), which surveyed builders and developers, indicated concern about the nature of controls imposed on medium density housing in Victoria by local government:

Restrictive height and density limits, combined with zoning multi-unit developments to small areas, have almost totally prevented higher density multi-unit developments. While town houses have been permitted in most municipalities, more innovative developments have been excluded (p. 18).

However, it would seem appropriate that different standards apply to higher density housing. For example, restrictive height limits can protect access to sunlight for existing residents. The issue is whether medium density housing is adversely affected by standards which are unduly complex and subject to wide variation between similar jurisdictions.

While some developers stated that they are in favour of providing certain mandatory requirements – for example landscaping, which is now a feature of many multi-unit developments – they complained that the same provisions are not required by councils for detached dwellings. This can create significant cost differentials between the two. Tract Consultants (1990) reported:

Respondents also expressed concern about the public open space levy, usually 5 per cent of the site value that is attached to medium-density housing sites. Why, said many respondents, should a site taking, for example, 6 lower to middle-income units attract a levy, when a single up-market dwelling on the same site attracts no levy. Granted that the additional population of a multi-unit development may make more demands on local community facilities, developers argue nonetheless that additional costs be recouped through the municipal rates levied on a number of properties rather than on just one property (p. 18).

The view that additional costs should be recouped through municipal rates levied on a number of properties might understandably be against the wishes of local councils. It also moves away from efficient pricing principles.

The issue that planning and development controls constrain choice was also raised. At the draft report hearings Mant said that there are strong in-built biases

against any form of housing other than detached housing:

... present planning and development approvals systems severely constrain choice. For example non detached house development is disadvantaged by: the need to gain planning approval; design, landscaping and building requirements in excess of those required for detached houses; problems in obtaining a cash flow because of unnecessary subdivision controls (Sub. 126, p. 1).

He said that subdivision control procedures for medium density developments unduly delay cash flows to builders because:

... you have got to build all the buildings before you can lodge your plan, before you can get your subdivision which means the amount of cash you have got to outlay before you start to get a cash flow is enormous (DR transcript, p. 297).

He added that:

... a great deal of the townhouse development in the City of Adelaide, of which there has been an enormous amount over the last 15 years ... has all been done on a non-strata basis, building sequentially, so that you ... don't have to subdivide it, you just start building and as you complete the first one you lodge a plan of subdivision of that parcel and immediately you get your cash so that you can build sequentially and get a cash flow; unlike under a strata everywhere else in Australia – where basically you have got to build the lot then get your subdivision and get your cash flow (DR transcript, p. 298).

The NHS (1991d) said that there is a need for streamlining the land titling process. It said that more flexible arrangements, such as are embodied in the recent New South Wales Community Titles legislation, are required to facilitate quicker land assembly in existing areas (p. 59).

At the draft report hearings Mant noted an alternative way of controlling development. He suggested that there would be advantages in auctioning the rights to develop in particular ways and making those rights tradeable amongst developers. Within the constraints for development set by environmental concerns, it is argued that this could allow maximum advantage to be taken of redevelopment opportunities. It could also, through the auction revenue, maximise the returns to society from the redevelopment (DR transcript, p. 309).

The effect of any such system of trading would depend primarily on the basis of determination of development 'rights', and whether or not they could subsequently be changed. For example, their value would depend on the way and the extent to which development is currently restricted.

Variations in development controls between councils for multi-unit dwellings are a further concern to developers. Tract Consultants (1990) reported that the lack of uniformity in planning codes made it difficult for smaller builders:

... who may only build a half dozen multi-unit dwellings per year to know the different codes of several councils, let alone 56 different municipalities (p. 11).

In some cases, problems faced by builders of medium density housing may be related to zoning issues rather than restrictive standards. 'As-of-right' provisions to construct two dwellings on one lot have been introduced in Victoria and New South Wales in an effort to facilitate medium density development. The New South Wales Government has implemented measures to permit subdivision of dual occupancy dwellings.

The New South Wales Local Government Association said that a Model Code for Medium Density Housing is being designed to provide State and Local Governments with a range of innovative residential design standards.

3.4 Big savings can be made

The OLG estimated that faster approvals times, improved administration, a reduction in State referrals and modifications of development standards could realise savings of \$1 billion per annum. It considers this estimate conservative. By inference, faster development approvals suggest some substantial cost savings in local council administration.

It is not clear how 'robust' these data are, nor how sensitive are the assumptions behind them. However, their sheer size points to significant scope for improvement in the relationship between developers and local councils and a better balance between the costs imposed on developers through regulation on the one hand and the community benefits (such as health and safety, investment stability through certainty, environmental and land management) on the other.

The Office proposed that design and operation of the regulatory system must be:

- based on the clear identification of real benefits and the means to deliver those benefits;
- simple and as easy to understand as possible;
- accessible to the public and have inbuilt accountability;
- able to incorporate new ideas and methods while at the same time providing some certainty for users; and
- capable of performance monitoring and evaluation.

Factors impeding the reform process were identified as inertia in the existing system, the nature and structure of inter-government relations, the multi-layered nature of the system, its political nature and its lack of transparency.

The NHS (1991d) also concluded that:

Significant reduction in housing costs depends on a reform of the institutional and regulatory environment in which the housing industry operates; at the moment that environment significantly impedes the industry from reaching its potential (p. 44).

3.5 Some changes are occurring

The Commonwealth Government, in association with the States and Territories, has developed the Australian Model Code for Residential Development (AMCORD). The Code allows for more cost-effective and innovative design in residential subdivision, increased choice in housing and residential developments, while maintaining or improving environmental quality. The use of rigorous controls has given way to greater reliance on performance standards (see chapter D1). Dawkins (1990) reviewed AMCORD and concluded that:

If ... rules can point to good practice, even to best practice, then industry has received a valuable bonus. This is what the Australian model code for residential development has achieved (p. 22).

Other programs include the Review of Residential Development Regulations Program which aims to facilitate the efficient provision of greater housing choice by ensuring that residential development regulations take account of contemporary cost effective practices. It seeks to promote the adoption of AMCORD. In 1990-91 the Commonwealth Government provided \$850 000 to councils to assist them in reviewing their planning, subdivision and siting controls. A 'higher density code' to supplement AMCORD is being developed.

The Australian Model Code for Urban Housing is a resource document aimed at providing opportunities for urban housing at higher densities. The Green Street Joint Venture is a partnership between the Commonwealth, State and local governments and the land development industry. It aims to reduce the cost of housing and encourages adoption of AMCORD practices.

The OLG said that Blacktown City Council has implemented a Fast Approvals System which deals with over 60 per cent of applications within five days. This is achieved through pre-application discussions, better definition of criteria, assistance to applicants, 'fast tracking', and improvements to certification, and delegation of authority. Again, the issue of a trade-off is raised. Fast-tracking which still allows consideration of costs and benefits is to be applauded. On the other hand, a 'rubber-stamping' process may instigate court delays and raise issues about professional liability, and ultimately about the need for, and value of, the consent process. It may be that the pre-application discussions noted above are very extensive in themselves.

The development industry has advocated the extension of certification of compliance to industry professionals. This can achieve reductions in approvals times and involve industry as a part of, rather than an adversary to, the approvals process. Professional certification is being introduced by the South-East Queensland Electricity Board.

The push for urban consolidation has seen many sites in cities previously used by government or industry, but now largely unused, targeted for redevelopment. This has been highlighted in New South Wales with the introduction of a State Environment Planning Policy, SEPP 32. This policy enables urban land no longer required by the government for its currently zoned purpose to be redeveloped for multi-unit housing and related developments.

While national uniformity may conflict in some circumstances with the ability of local councils to maintain locally desired standards of amenity, these developments are discretionary. Thus, tensions between diversity and uniformity are reduced.

The Commission supports moves towards standardising certain development codes such as engineering standards (for example, kerbing and guttering, pipe sizes and the like). However, this should not be used to prevent different standards being set in different local government areas where so preferred and where justified on performance grounds.

The Commission sees merit in attempts to eliminate unnecessary delays in the development approval process. Nevertheless, it must be recognised that some time has to be allowed as an inevitable part of the necessary consultations which democratic processes require.

D4 THE HOUSING CONSTRUCTION INDUSTRY

The affordability of dwellings partly reflects their construction costs. Site conditions for single dwelling construction are different from those which apply in the case of attached and other forms of higher density dwellings, which may involve higher costs. This chapter briefly reviews the residential construction industry, and notes some factors which influence the supply and costs of different dwelling types. There are indications that applying commercial site employment conditions to medium density building sites may impose additional costs as well as deterring smaller-scale builders from venturing into medium density developments.

4.1 Structure of the housing construction industry

Detached housing construction or cottage building is dominated by a large number of small building firms and owner-builders using sub-contract labour.

Many [building firms] comprise a working proprietor and a small workforce, building a few homes each year (NHS 1991d, p. 28).

Indeed, working proprietors comprised about one-third of the workforce in 1988-89 (NHS, 1991d, p. 29). Around 60 per cent of builders in this sector directly employed two persons or less in 1988-89, while about 3 per cent employed more than 11 people. On average there were 1.3 on-site employees per house construction establishment (NHS 1991d, p. 28).

The detached housing sector accounts for 72 per cent of all housing commencements (NHS 1991d, p. 27). About 77 per cent of builders in 1988-89 had a turnover of less than \$500 000: these accounted for about 21 per cent of total turnover. The large number of small firms and the relative ease of entry have facilitated competition. Indeed, the Bureau of Industry Economics noted that:

... the market for residential construction services is very competitive, arguably one of the most competitive in the economy ... (BIE 1990, p. 8, cited in NHS 1991d, p. 28).

In contrast, construction of higher density dwellings, such as villas, townhouses, and apartment blocks, tends to be dominated by a smaller number of large firms, with a more regulated labour force. 'Other residential construction establishments' had an average of 2.6 on-site employees in 1988-89, double that of the detached house building sector (NHS 1991d, p. 29). Over half of total turnover was accounted for by about 4 per cent of establishments. Most work is contracted, rather than speculative.

The owner-builder sector of the industry appears to be an important and growing sector, but the available data is imprecise. Costs are generally lower because of the labour contribution of the owner-builder. However, the NHS (1991d) found that increasing constraints are being placed on owner-builders which may impede future growth in this segment of the market:

Apart from restrictions imposed by local governments, some States (for example Victoria) are moving to bring owner builders under the same institutional and regulatory framework as registered builders; for example, by imposing requirements on owner builders to provide a lengthy guarantee on the finished house. Maintaining quality control can be one of the major difficulties faced by owner builders and the need to provide guarantees may be sufficient to deter many potential builders (p. 30).

The NHS also observed that kit homes may not be acceptable under the building codes of some local government areas.

Licensing and regulation of builders may increase construction costs (building regulations are discussed in chapter D3). The NHS (1991d) found:

State governments regulate the participants in the building industry with the aim of guaranteeing the professionalism and quality of builders and their products. However, care needs to be taken to ensure a balance between the cost of regulation of standards and the benefits to consumers. Builders are licensed and their work inspected at various stages of construction, although inspection by local governments is not necessarily directed at quality, but is more of a means of checking that certain steps and procedures have been carried out. In addition, the States uphold consumer rights through insurance schemes and dispute resolution procedures (p. 41).

While the building materials sector has one of the lowest rates of industry protection of any economic sector (IAC 1989), in some areas there is a high concentration of ownership. Moreover, by their nature many inputs enjoy considerable natural protection: low levels of import competition may mean that industry concentration has greater potential to affect prices.

The NHS noted that there is a high degree of concentration among suppliers of building materials such as, bricks, cement, roof tiles, plaster board, fibre-cement products and steel, but said that this does not necessarily mean reduced competition. However:

The Housing Costs Study (Travers Morgan) noted that while the builders they contacted were unable to show that these concentrations of ownership resulted in higher prices, the builders reported less opportunity for price negotiation for plasterboard in the three cities, and for bricks in Adelaide, where there are only two major manufacturers (NHS 1991d, pp. 37-8).

The NHS also said that the adoption of new techniques and materials in the housing industry has been slow. It added that the introduction of performance-based building codes, rather than regulations based on historical techniques and

materials, will remove one impediment to greater innovation (NHS 1991d, p. 41 and NHS 1992c, section 7.3).

Some work is shifting off-site

In the building industry generally, labour is increasingly being shifted off-site, as much work previously undertaken on the work site now occurs in manufacturing establishments. For example, it is now common for wall modules to be made and pre-fitted with electrical wiring off-site, and then assembled on site.

The Australian Council of Trade Unions told the Senate Standing Committee on Employment, Education and Training that on-site labour has become a smaller proportion of total labour and is less skilled and lower paid:

On-site labour in the housing sector is being run down in terms of both quantity and quality. Much skilled work is now carried out in factories where precision is greater, utilisation of specialised machinery is higher and unit costs lower because of general economies of scale ... Factory production of items such as roof trusses, general frames, windows, doors, fittings such as cupboards and wardrobes and many other items are now routinely manufactured off-site and only fitted into position by on-site labour.

It went on to say:

It might be added that the transfer to factory production in itself means a shift in labour inputs from builder/sub-contractor to employee/wage earner. Factory production in Australia is generally a unionised activity, but there has been no suggestion from industry lobbyists that this change would increase housing costs. In fact the change has been made because it is cheaper (ACTU 1992).

In 1989-90, while the building and construction industry had around 350 000 on-site employees, there were a further 60 000 employed off-site (DIR 1990, p. 26).

One of the implications of this development is that some work is less site-specific as factories supply materials for more than one site. There will also be differences in the nature of union concerns as between on-site and off-site labour. Union amalgamations in the building industry mean that much on-site and off-site labour may now be represented by the same union.

4.2 Construction costs for higher density dwellings

Jennings Housing said:

The Australian housing industry is among the most efficient in the world with its emphasis on single unit construction using sub-contract labour. It requires a low capital base and is very efficient in its use of finance.

It contrasted this with higher density developments:

Multi-unit housing, on the other hand, requires the accumulation of large amounts of capital and incurs greater finance costs. In addition, the actual construction costs are also higher due to labour costs which are 30 per cent higher in the institutionalised commercial construction industry than in the housing industry ... For example, in Brisbane, Jennings has constructed single level attached houses which cost about 20 per cent more than individual houses of similar size, despite the fact that both were constructed using sub-contract labour. Once commercial construction methods are employed, labour costs increase by up to 30 per cent, increasing total costs by an additional 15 per cent. Multi storey construction further adds to costs (Sub. 21, p. 8).

There are clearly several factors which may contribute to the higher costs of higher density dwellings. They include additional standards and regulations imposed on higher density developments, different building technologies and costs of storing building materials; and, in the case of redevelopments, the higher costs of working in confined areas. Site preparation and clean-up costs may also be significant.

At an urban consolidation conference in 1991, the Victorian Department of Planning and Housing attributed higher construction costs for multi-unit development to extra foundations, more sophisticated building technologies, and urban design/landscaping requirements, and higher union award rates.

In a paper entitled *Housing Affordability*, the Department noted the concerns of the housing industry about the impact on the cost of new dwellings of changes to building codes, regulations and government charges. It found that:

These changes include increasing building standards through building codes (for example requirements for stronger glazing), introduction of new building regulations (for example making insulation and smoke detectors mandatory) and increasing government charges and taxes (for example payroll tax, WorkCare). It has been estimated that the combined effect of these changes over the past ten years has been to add \$9594 to the price of a 'typical' \$94 000 house at current prices [Econsult, 1991] (Department of Planning and Housing, Victoria 1991, p. 31).

Some of the regulatory requirements imposed on multi-unit dwellings include car parking provisions, driveways, open space requirements, landscaping and fencing. Their provision increases the costs of multi-unit dwellings over detached owner-builder houses where the work may be undertaken by the owner-builder. This 'sweat equity' option is not available to medium density construction.

The standards required for medium density developments are considered by some developers to be excessive. A study by Travers Morgan⁶ (1991a) found:

Where standard designs can be used in multi-unit development, including existing house designs, the construction cost can be similar to detached dwellings. However, provision for driveways, parking, landscaping and fencing may add 10-15 per cent to construction cost (p. vii).

It added that where non-standard forms of multi-unit dwellings are used they:

... can substantially increase construction costs, for example \$10 000 for two-storey construction. Survey examples indicate that construction costs for 3 bedroom multi-unit dwellings in established areas may be 50% higher than similar size detached dwellings at the fringe (p. viii).

Jennings Housing noted that for multi-unit dwellings:

The methods of construction are also more complex and may require scaffolding and cranes. The materials used are more expensive to purchase and handle (Sub. 21, p. 8).

The Australian Capital Territory Government said:

There is a significant differential between the costs of building detached housing and of building multi-unit housing. Multi-unit dwellings have a 10-15% greater cost per square of housing, which is the product of both differences in the building codes (for example, standards for sound – and fire – proofing of common walls) and in building industry award rates for different classes of buildings (Sub. 63, p. 35).

The DHHCS said:

... the standards imposed often far exceed those which might be provided by an individual home owner, and that any regulation should be performance based and form neutral. Reflecting this efficient and equitable regulation would apply to all dwellings, regardless of form, and require compliance within a time span which would leave it to individual developers/owners to determine how work is to be undertaken (Sub. 155, p. 26).

As noted in chapter B6, the Commission considers that regulations should be more performance oriented.

Workers compensation provisions (such as WorkCare in Victoria and WorkCover in New South Wales and South Australia) can also affect outcomes. For example, a study of the construction of medium density dwellings by

⁶ Paper prepared for the Commonwealth Department of Industry, Technology and Commerce and the Housing Administrations of the States of New South Wales, Victoria and South Australia.

Woodhead (1991) found that:

WorkCover insurance is a mandatory charge for all jobs and attracts a standard 4.7 per cent premium on the cost of the labour for single detached dwellings. For dwellings which are attached to each other by a wall or a roof the premium is 7.5 per cent. This is a clear discrimination against medium density dwellings with no apparent logical basis, as it applies irrespective of building height ... If the labour content of a dwelling is taken at 30 per cent of the total cost to the buyer, a detached dwelling costing \$60 000 would incur a WorkCover cost of \$846 whereas an identically priced unit attached to an adjoining one would incur WorkCover costs of \$1350, an additional cost of \$504 (pp. 40-1).

That study recommended that WorkCover insurance rates for single and two storey medium density developments including strata titled units, be the same as for single and two storey detached dwellings.

Labour arrangements

Several participants said that, while there were justifiable cost differences between the detached housing and higher density housing sectors because of the use of different materials and construction methods, and site difficulties, an important source of cost difference was the way labour is contracted and paid.

Most detached housing is constructed by sub-contracted, non-unionised labour. However, when a construction site is determined to be 'commercial' it is subject to more regulated labour market conditions. Union rules and conditions apply.

The definition of commercial sites, and the procedures by which particular sites come to be so designated, varies among the States. There is no specific legislation which defines a commercial site. Generally across the States, some medium and all high density developments are considered to be commercial sites, while single dwelling projects are not. Builders and unions generally negotiate on whether a development is to be regarded as a commercial site. At the public hearings in Perth, Homeswest said that sites can become unionised once there are five or six units on a site, regardless of the number of storeys. For example, a site containing 10 detached buildings may be classified as a union site (transcript, p. 703).

Wage rates for sub-contract work in the detached housing sector are usually determined by each builder, having regard to the availability of labour with the necessary skills and experience. An award does not generally operate (although some trades such as plumbers are covered by an award). Several participants said that the use of unionised labour on commercial sites increases the cost of each person employed and thereby adds to the costs of constructing medium density dwellings.

On commercial sites – higher density projects – certain standards and conditions are sought by unions. They include over-award payments, site allowances, superannuation, rostered days off, sick leave, recreation leave and leave bonuses. Site allowances are negotiated on a site-by-site basis before the project begins; they are effectively a bonus. Pay and conditions on commercial sites (in addition to those in awards) are often set out in a site agreement. All sub-contractors subsequently working on the site are required to abide by the agreement.

Effectively, the sub-contracting system in the cottage construction sector provides an element of competition in the supply of labour, which is not present when award conditions and commercial site agreements apply on medium density and other sites.

One issue is the effect of current arrangements on the incentive for builders to construct medium density housing. The HIA said:

The vast majority of home building firms view union involvement in the industry with deep suspicion and are therefore reluctant to expand their operations into medium density ... Public housing authorities require building companies to adhere to union - imposed conditions (Sub. 52, pp. 22-3).

The NHS (1991d) found that:

Differences in the labour force structure between detached and other residential dwelling construction may constrain any shift towards higher density housing (p. 31).

This suggests that to some extent builders are orienting their activities in such a way as to avoid having sites nominated as ‘commercial’. If so, this would mean that these rules and procedures are impeding the supply of medium density housing.

There are some moves towards introducing enterprise agreements into the building and construction industry. However, the Industry Commission’s report on *Construction Costs of Major Projects* noted a problem with organising labour along essentially enterprise lines in the construction industry. Because most of the people on construction projects are employed by sub-contractors rather than a single employer, the temporary work-site ‘enterprise’, around which work is organised, usually contains a number of more permanent enterprises – the main builder and a variety of smaller contractors and sub-contractors. In the construction industry, this could result in a variety of enterprise agreements with different wages and conditions operating on the same work site – a situation that is unlikely to be conducive to industrial harmony (IC 1991c, p. 87). However, this is not necessarily the case: innovative agreements have met the potential problem by making direct provision for their benefits to be extended to sub-contractors and others on-site, with appropriate provisos.

An example of recent changes in the building and construction industry is the joint development agreement between Civil and Civic and the Construction, Forestry, Mining and Energy Union (CFMEU). It will involve, among other things, possible changes to the standard spread of hours, site-by-site productivity measurement, and a tightening of current provisions concerning inclement weather to minimise lost time. For example, workers are to be relocated to training, jobs reprogramming or an undercover work area in the event of wet weather.

4.3 Summing up

The cost differences between detached dwellings and higher density projects can be attributed to a number of factors. Many are unavoidable, such as the additional costs of difficult sites, different materials or technologies needed for non-detached building. Government regulations extend approval processes, and differing building requirements and standards can also raise costs.

Safety arrangements may well differ between detached dwelling sites and multi-unit sites. Detached dwellings or cottage house sites may permit work practices which could potentially be unsafe in a more confined space. Owner-occupiers' contributions to construction such as paving, landscaping and other tasks frequently performed by home owners reduce the costs of detached dwellings relative to higher density projects.

The CFMEU was invited to respond to assertions, made in several submissions, that there is a considerable difference in labour costs between the detached housing market and commercial sites. However, the CFMEU argued that this falls outside the inquiry's terms of reference as 'it has nothing whatsoever, to do with the taxation and financial policies of government'. However, these matters were raised by participants and they are clearly relevant to the question of housing affordability and choice in housing, which are central to the inquiry.

The evidence received by the Commission in this inquiry suggests that:

- commercial site work practices and other conditions increase costs, but the extent is unclear;
- perhaps more importantly, they may deter some developers and builders from involvement in medium density developments, reducing the options available to home buyers.

The DHHCS advised the Commission that it is currently undertaking a study of *Cost Differentials in the Housing Industry* for the Australian Housing Industry Development Council. It said:

The study aims to identify cost differentials that can occur in the construction of higher density versus detached housing. It will analyse the impact these have on the development of higher density forms and discuss policies which could reduce these differentials (Sub. 155, p. 25).

The first part of the study will cover labour market practices. The second part will include research relating to the specific cost differentials between detached and higher density housing other than those associated with labour, such as research into building standards and materials. However, these studies will not be available until after completion of the Commission's report.