



Final Report

Quantifying planning system performance and Australia's housing reform agenda: an Investigative Panel

authored by

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ACRONYMS

ABS	Australian Bureau of Statistics
AHURI	Australian Housing and Urban Research Institute Ltd.
AMR	Annual Monitoring Report
AURIN	Australian Urban Research Infrastructure Network
AONB	Areas of Outstanding Natural Beauty
COAG	Council of Australian Governments
CIL	Community Infrastructure Levy
DA	Development Application
DCLG	Department for Communities and Local Government
EPBC Act	Environmental Conservation and Biodiversity Act
GDP	Gross Domestic Product
GIS	Geographic Information Systems
GMA	Growth Management Act
GVA	Gross Value Added
HCA	Homes and Communities Agency
HSSA	Housing Strategy Statistical Appendix
HUD	US Department of Housing and Urban Development
LDF	Local Development Framework
LGA	Local Government Area
LGPMC	Local Government and Planning Minister's Council
LUPIN	Land Use Planning Information Network
MAPC	Metropolitan Area Planning Council
MCU	Major Cities Unit
NHCS	National Housing Supply Council
NIS	National Indicator Set
ODPM	Office of the Deputy Prime Minister
PDL	Previously Developed Land
SOAC	State of Australian Cities (Report)
RSS	Regional Spatial Strategy

EXECUTIVE SUMMARY

As Australia's national urban policy framework evolves there is growing concern for the quality and performance of Australian planning systems (Local Government and Planning Ministers' Council 2011, KPMG 2010, Productivity Commission 2011). In the context of serious housing supply and affordability problems, there is particular scrutiny of the range of housing outcomes delivered through the planning and development process (NHSC 2010a). However, the evidentiary framework for measuring planning performance across a range of objectives and goals, including those relating to housing, remains limited.

This study sought to establish an evidentiary foundation, so as to inform planning and housing reform processes, provide a basis for ongoing performance monitoring, and support further research efforts in this significant policy arena. Approaches to measuring planning system and housing market performance were compared across four jurisdictions: Australia, New Zealand, the United Kingdom (UK) and the United States (US). These four jurisdictions were selected because of their comparable systems for planning and housing provision. The study approach involved an investigative panel of experts from government, industry, and international academics (from the UK and New Zealand).

This final report for the project sets out the findings of the investigative panel and the wider research undertaken to support the panel deliberations. It incorporates work presented in two earlier discussion papers prepared prior to the investigative panel meetings, and draws on material developed by one of the expert panellists, Professor Bramley, on planning performance measurement and housing outcomes in the UK. The final report also presents some preliminary modelling using a popular planning system indicator—residential development approval times—to demonstrate the need for a wide spectrum of measures for assessing planning performance in relation to housing and other community outcomes.

Research aims, questions and approach

The project aimed to establish a framework for examining how spatial policy, planning regulation, and infrastructure charging regimes influence housing market outcomes across Australian cities and regions; to inform the planning and housing reform policy; and to provide a basis for ongoing monitoring of planning system performance. Consistent with this aim, the following questions structured the research:

- How is planning system performance (e.g. policy settings, land release, development regulations, infrastructure charging, approval processes, timelines) quantified across the UK, the US, New Zealand and Australia?
- What do existing measures suggest in terms of planning system performance and relative housing market efficiency (land and housing supply and affordability)?
- How do specific affordable housing or housing diversity requirements (such as inclusionary zoning or dwelling mix mandates) affect planning system performance and housing market efficiency?
- What are the policy implications in relation to Australia's housing reform agenda, and the ongoing review and monitoring of planning system performance?

An investigative panel of planning and housing researchers, and experts from government, planning and development industry, met in late 2011 to deliberate on these questions. Investigative panels are designed to bring about direct engagement between experts from the research and policy communities, and potentially practitioners from industry and community sectors, to interrogate a specific policy or

practice question. The process draws on an existing evidence base and the experience and expertise of the members of the investigative panel, who meet to discuss the research question. The full list of panel members is provided in Appendix 1.

Panel meetings held 21-22 November and 6 December 2011 were supported by a discussion paper prepared by the research team and written advice and presentations by international panel members Professor Bramley and Dr Patricia Austin. Following the panel meetings, the research team undertook further work to refine the original review of existing research and information sources, and to test the potential to replicate ongoing research into planning system performance and sub housing market supply patterns being undertaken by Professor Bramley, in the context of the UK.

Quantifying planning system and housing market performance: the literature

The literature on planning system performance is reviewed in Section 2 of this report. There is a disparate body of international literature on theory, practice, and approaches to measuring the performance of the planning system, very little of which has originated from Australia. We distinguish two main trajectories of work. The first stems from the wider tradition of performance management in the public sector, focusing largely on the performance of the service aspects of planning practice (Mastop & Needham 1997, Carmona & Sieh 2008). The second, wider body of research focuses more on whether and how planning achieves its stated objectives or results in other, unanticipated outcomes, such as blockages in the supply of land or housing.

Section 3 of the report explores the literature on relationships between planning and the housing market. The range of potential housing market impacts arising from planning is diverse, with studies focusing particularly on rates of new housing supply (Bramley 1998, Aura & Davidoff 2008, Ball 2010), house prices (Hui & Ho 2003, Glaeser et al. 2005), house rents (Schuetz 2009), spillover effects on surrounding housing markets (increased construction or price) (Byun et al. 2005), housing density and diversity (Bramley & Power 2009), and developer certainty or confidence (Monk & Whitehead 1999). Much of the literature identifies a positive relationship between planning and house prices, arising from either land value uplift ('good' planning creating or preserving amenity (Ihlanfeldt 2009) or supply constraint (associated with specific actual or perceived development controls) (Monk & Whitehead 1999, Monk et al. 1996, Bramley & Leishman 2005, Sunding & Swoboda 2010).

However, a key challenge is to situate planning in relation to the wider range of factors influencing urban change and the housing market including geographic constraints and opportunities, underlying population growth and household formation, industry, unemployment and income trends, interest rates and inflation, price to rent ratios (as an indicator of returns on housing investment), and the potential value of alternative investments such as the stock market (Otto 2007, Hui & Ho 2003, Malpezzi 2002, Saiz 2010). These studies demonstrate the need for a wide evaluative framework supported by a full spectrum of indicators to understand the range of outcomes that may arise from different planning interventions, in different spatial, community, and political contexts.

Planning system performance and housing market outcomes: Articulating objectives and approaches to measurement

Section 4 of the report compares approaches to measuring planning system and housing market outcomes across the four jurisdictions, drawing on material circulated prior to the panel meetings, presentations by panel members, and wider panel discussions. While a range of different performance measurement and data collection frameworks were examined, issues in data timeliness, consistency, and scale persist

across all jurisdictions. However, in comparison to Australia, processes for government reporting of key housing and planning indicators are established components of wider performance measurement frameworks in the UK and parts of the US.

Panellists agreed that although contemporary performance cultures in government have begun to place greater emphasis on monitoring and benchmarking the performance of planning authorities, in UK as in Australia, this seems to focus more on procedure and processing than on substantive spatial development outputs. There has been a greater interest in wider outcomes, such as housing affordability, and considerable data are available on affordability indicators across all of the jurisdictions reviewed here. However, academic panellists emphasised the difficulty of directly linking these outcomes to the actual policies, activities, and outputs of a local planning regime.

A holistic approach would triangulate multiple sources of information about the planning system—from readily measurable data on service performance (timeframes, decision volumes, appeals)—with information on policy orientation and regulatory approach (plan goals and requirements), and data on the implementation of policy goals—for instance, spatial development patterns, transport and environmental quality indicators, and stakeholder views.

Finally, panel members emphasised the need to look very carefully at the full spectrum of relationships between planning, housing supply and affordability, with several panel members indicating that the international literature tended towards over simplification of these factors. In developing a research model for application in Australia, all agreed on the need to balance considerations about what is both important and valid as an indicator of planning performance or housing market outcomes, with what is actually able to be researched given existing and potential the availability of data.

Measuring planning system performance and housing market outcomes in Australia: towards a comprehensive research framework

Section 5 proposes a typology of potential planning system and housing market measures and indicators relating to land supply, planning system policy orientation, regulatory constraint, service efficiency, and planning authority ‘culture’ (Table 1). The potential application of these measures is explored firstly in relation to England, and then in relation to Australia, using demonstration models populated by available data.

Table 1: Measuring planning performance and housing market outcomes

Planning measure	Indicator	Reference
Residential land supply	Short term availability of serviced sites	(Bramley 1998; Bramley & Leishman 2005)
	Type of sites (i.e. Brownfield/ Greenfield / infill)	(Buxton & Taylor 2011)
	GIS data on particular land use zones / classifications	
	Size/ownership of land	
	Infrastructure provision	
	Long term supply pipeline	
Policy orientation	Introduction of specific new control	(Chamblee et al. 2009; Zhou et al. 2008)
	Strategic state / regional policy content	(Waldner 2008; Lewis 2005)
	Content of comprehensive local plans	(Ihlanfeldt 2009)
Regulatory constraint	Controls (survey database) / GIS data	(Lewis 2000; Pendall 2006; Gyourko et al. 2008)
	Urban Growth Boundary / Land supply policy	(Cunningham 2007; Kahn et al. 2010; Landis 2006)
	Developer contribution requirements (including inclusionary zoning)	(Mathur et al. 2004a; Burge et al. 2007; Schuetz, Meltzer et al. 2011)
Service efficiency	Approval / refusal rates	(Hui & Ho 2003)
	Decision times	(Ball 2010)
	Appeals	(Hui & Ho 2003)
Planning authority culture	Developer perceptions of local administrators	(Monk & Whitehead 1999)
	Type of decision (code, merit, political)	(Kahn 2011; Levine 1999)
Outcomes	Land values	(Shilling et al. 1991)
	House prices	(Bramley 1993; Dawkins & Nelson 2002; Glaeser et al. 2005)
	Rates of new housing construction (permissions, completions, net additions)	(Bramley 1998; Lewis 2005)
	Spillover effects (price / supply)	(Byun et al. 2005; Monk & Whitehead 1999)
	New housing composition (density, diversity)	(White & Allmendinger 2003)
	Affordable housing supply	(Gurran & Whitehead 2011)

Source: the authors

Drawing on work developed by Professor Bramley for this study, the potential application of several of these measures is demonstrated in relation to local planning authorities and sub-regional housing markets in England, finding that their impact varies under different spatial and development contexts. Indicators that seem to be of particular importance relate to the overall 'planning stance' of a local authority; land

availability (having regard to physical constraints); the share of small sites, previously developed land within a local area; and actual housing completions (as opposed to planning permissions). The main results of modelling (shown in Appendix 8, Table A5) are:

- The impact of planning consents on supply is considerably less than ‘one for one’.
- Additional supply has some effect in steering net migration to the area and in increasing household formation.
- Additional supply would have a moderate effect on house prices and affordability, but this would take quite a long time to be felt. This would also impact favourably on aspects of housing need including through increasing the supply of social sector lettings.

Professor Bramley’s work also examined the potential regulatory impact associated with requirements for affordable housing (implemented in England under ‘Section 106 agreements’ made through the process of planning approval). As much social housing is now delivered through this mechanism (Austin et al. 2010), the potential impact of this obligation was tested in the context of econometric models for supply (see Tables A1; A5). These models show that the social housing completions variable has a significant *positive* impact on the rate of new private house building.

Using the English illustration as a reference point, we then examine the potential to replicate such work, using data for the Sydney metropolitan region in New South Wales (NSW) Australia. Our preliminary efforts indicate that existing sources of information are not sufficient to undertake even simple quantitative analyses of planning performance and or relationships between particular planning approaches and housing market outcomes in NSW. Our review of Australian data sources and panel deliberations suggest similar limitations exist across the Australian jurisdictions.

However, there is extensive data on local government development approval trends and timeframes, reported since 2007. Using this data, we analyse two efficiency indicators—approval rates and decision times. This analysis shows firstly, a high degree of certainty and predictability in the NSW planning system—at least in terms of likelihood of development approval—with approval rates of between 85-100 per cent and very little annual variation. Second, a regression analysis of residential approval decision times shows that variations appear more connected to locational factors—such as median household incomes—than the ‘performance’ of the local planning authority.

Summary of key findings

Key findings are summarised in Section 6.

Key findings

Comparing planning system performance measurement across Australia, New Zealand, the US and the UK

Contextual factors help explain differences in approaches to defining and measuring planning and housing market performance. For instance, in the UK, a long held emphasis on planning for housing provision across the entire market spectrum explains relatively comprehensive systems for housing and planning data collection and review. Similarly, each of the US jurisdictions reviewed have long traditions of addressing housing affordability considerations through the planning process, routinely monitored through systematic data collection. By contrast, Australian data collection is biased towards service efficiency and haphazard land supply and

dwelling approval statistics rather than substantive objectives underlying the planning process. This may change as the national urban policy and Council of Australian Governments (COAG) performance frameworks for capital city planning systems evolve. However, data limitations present a barrier for appropriate performance measurement or more in depth research on relationships between planning and housing market outcomes in Australia.

Planning system performance and relative housing market efficiency

To examine existing measures of planning system performance and relative housing market efficiency (land and housing supply and affordability), Professor Bramley undertook illustrative modelling, using data pertaining to sub regional housing markets of England. This work suggests that: 'planning stance' (as a composite indicator of local authority policy orientation towards accommodating or limiting new housing growth) appears to have considerable impact in the UK.

However, narrow 'system efficiency' indicators (which focus on, for instance, decision speed and rates of approval), and which are often used as a proxy for planning stance, are generally not reliable predictors of housing market outcomes, particularly in comparison to analyses of geographical land constraints.

Further, residential development type and context affects the flow of planning permission, supporting the expectation that more complex sites will require more intensive assessment. However, this may change over time as local authority staff gain confidence in dealing with multi-unit developments.

A preliminary analysis of existing Australian data on planning performance in relation to housing supply (focusing on the Sydney metropolitan region in NSW) found that commonly used indicators of 'planning stance'—approval rates, and decision times—have little weight when considered in relation to locational factors. This was demonstrated using a regression analysis of residential approval times.

Panellists emphasised the limitations of current Australian information sources and the need to capture a wider range of quantitative and qualitative data for planning performance and the housing market.

Specific housing requirements and wider planning system performance

There has been considerable concern in Australia about the potential impact of additional specific planning requirements, such as requirements to contribute towards affordable housing. However, the modelling undertaken by Professor Bramley found a positive relationship between rates of new social housing completions within a local area, and overall housing supply. As a growing proportion of social housing in England is delivered through the planning process, this is an important finding, implying that affordable housing requirements, once embedded, do not have a negative impact on overall rates of new housing supply within a local area. Professor Bramley identifies two main reasons for this: firstly, that higher volumes of new social housing within an area is likely indicative of an overall planning stance that is positive towards housing development. Secondly, social housing developers are able to operate counter cyclically and so maintain output even during constrained financial times. Similarly, advice provided by industry panellists suggests that affordable housing requirements, like other regulatory burdens, would not be problematic in the Australian context if situated within a planning system offering clarity and certainty in decision making, charging, and infrastructure provision.

Policy implications in relation to Australia's housing reform agenda, and the ongoing review and monitoring of planning system performance

Policy implications arising from this study include:

- The need to better integrate Australian urban policy, planning regulation, and housing goals, articulating higher order objectives for regional and local interpretation. The growing suite of national urban policies and review processes (e.g. Department of Infrastructure and Transport 2011, COAG Reform Council 2011b, NHSC 2011) suggest a shift towards wider articulation of policy aspirations for Australian cities and regions, but there is potential for more explicit synthesis of urban and housing agendas.
- The importance of a wide spectrum of goals (and corresponding measures) moving beyond basic emphases on residential land supply and the flow of dwelling approvals to higher order objectives, and more systematic approaches to data collection and review. Drawing on the international examples, at minimum annual local data sets should address:
 - Dwelling completions (as distinct from land release or dwelling approvals):
 - net dwelling additions
 - the proportion of new homes affordable to different income groups
 - the environmental performance of new housing
 - infrastructure contribution costs.
- Again, there is a steady trend towards more comprehensive and consistent reporting on planning processes and outputs at local and regional scales (Local Government and Planning Ministers' Council 2011), which could be readily extended to track a fuller range of outcomes including those relating to housing.
- Many of the current assumptions about the planning system and its potential relationships to housing seem unsupported by the evidence available. For instance, rather than indicating efficient or sluggish performance, in Sydney at least, planning decision times appear to be impacted by mean household income (processing times increase in wealthier LGAs), the number of applications processed (the greater the volume the slower the times) and the number of DAs determined by staff (rather than by elected councillors). Further research, drawing on the framework developed through the investigative panel deliberations, and partially demonstrated in relation to data pertaining to the UK, would provide a platform for more informed and policy relevant analysis of the relationships between the planning system and housing outcomes in the future.
- Modelling of data from the UK suggests that policies to secure affordable housing in new developments tend to coincide with increased housing supply output overall, rather than acting as a constraint or disincentive to housing development. This suggests that Australia's planning and housing reform agendas might focus on supporting, and measuring, more positive interactions between planning, housing supply and affordability in future. In practice, this would require affordable housing targets to be reframed as a supply lever rather than a regulatory burden, implying more nuanced approaches to the design and critical evaluation of planning tools and processes.

1 INTRODUCTION

Over the past few years there has been intense interest by a range of groups, from industry to government, in the performance of the land use planning system (Productivity Commission 2011). For example, Australia's housing reform agenda calls for major changes to planning systems and processes—extending from policy settings on land supply through to regulatory standardisation and infrastructure charging (COAG 2010). However, a research vacuum in this important policy area means that the evidence base to inform such change is inadequate and dominated by sectoral interests. The indicators of performance are simplistic and in many cases misunderstand the purpose of planning systems. Similar challenges face housing and planning policy makers in the United States (US), the United Kingdom (UK) and New Zealand, where governments have also begun to address planning system barriers to housing supply and affordability (Bramley 2007, LGPMC 2011, Pendall et al. 2006, Ministry for the Environment 2010).

In this context, this project sought to examine how Australian planning system performance should be measured in relation to housing supply and affordability indicators. The project aimed to identify current measures of planning system performance, particularly in relation to indicators of housing supply and affordability; and to test the utility of these measures in monitoring relationships between planning policy settings and housing market efficiency. The project has been undertaken via an investigative panel, involving experts from government, industry, and international academics (from the UK and New Zealand).

This final report sets out the findings of the investigative panel and the wider research undertaken to support panel deliberations. It incorporates work presented in two earlier discussion papers prepared prior to the investigative panel meetings, and draws on material developed by one of the expert panellists, Professor Bramley, on planning performance measurement and housing outcomes in the UK (reproduced in full in Appendix 8).

1.1 Policy context

The relationship between planning system performance and housing market efficiency is high on the policy agenda in Australia and internationally. Through the Council of Australian Governments (COAG) a range of commitments to land use planning reform for housing supply have been made, including processes for land aggregation, zoning and governance; planning system consistency across jurisdictions; metropolitan planning criteria; and requirements for affordable and diverse housing development. The first progress report to COAG (November 2009) highlighted diffuse effort across the States and Territories in planning for affordable housing, in the development of nationally consistent targets for affordable housing and in developing national planning system principles to support housing supply. However, a strong evidence base to define and monitor existing planning system performance in relation to housing supply outcomes is necessary to inform meaningful change.

Such information is crucial for several reasons. Firstly, in the absence of concrete and comparable national data on planning system requirements, processes, and performance, much of the policy debate is dominated by the views of particular industry sectors. While valid perspectives, a more objective evidence base is needed to inform decisions regarding specific policy settings—for instance, decisions about the balance between Greenfield/Brownfield land supply for housing development.

Similarly, planning policy decisions regarding approaches to infrastructure funding and development contributions need access to reliable information concerning the land market, housing supply, and affordability implications of different charging regimes. In promoting more widespread use of planning mechanisms for affordable housing development, policy makers need access to credible evidence about the likely housing market and wider affordability impacts of such requirements.

A series of largely qualitative studies have been undertaken by AHURI researchers on related themes, including the ways in which the planning system can contribute to the supply of affordable housing (Gurran et al. 2008), on the costs associated with the planning system for residential development (Gurran et al. 2009), and how planning reform may affect supply outcomes in metropolitan Victoria (Goodman et al. 2010). This project sought to build on this work, while informing a much wider program of research and policy development on spatial policy, regulation, and housing markets across urban and regional Australia.

1.2 Research aims and questions

The overarching project aim was to establish an evidentiary framework for understanding how spatial policy, planning regulation, and infrastructure charging regimes influence housing market outcomes across Australian cities and regions; to inform the planning and housing reform policy; and to provide a basis for ongoing monitoring of planning system performance.

Consistent with these aims, the following questions structured the research:

- How is planning system performance (e.g. policy settings, land release, development regulations, infrastructure charging, approval processes, timelines) quantified across the UK, the US, New Zealand and Australia?
- What do existing measures suggest in terms of planning system performance and relative housing market efficiency (land and housing supply and affordability)?
- How do specific affordable housing or housing diversity requirements (such as inclusionary zoning or dwelling mix mandates) affect planning system performance and housing market efficiency?
- What are the policy implications in relation to Australia's housing reform agenda, and the ongoing review and monitoring of planning system performance?

In addition to a research and policy review conducted by the research team, an investigative panel of planning and housing researchers, and experts from government and industry, deliberated on themes arising from the research questions.

1.3 The investigative panel approach

Investigative panels are a research vehicle to bring about direct engagement between experts from the research and policy communities, and potentially practitioners from industry or community sectors, to interrogate a specific policy or practice question. The process draws on an existing evidence base and the experience and expertise of the members of the Investigative Panel, who meet to discuss the research question. The expert panel for this project included planning and housing researchers from Australia, New Zealand, and the UK, as well as leading policy makers and industry representatives. The full list of panel members is provided in Appendix 1.

The two international panellists, Professor Glen Bramley from Heriot-Watt University in Edinburgh and Dr Patricia Austin from the University of Auckland, made substantial contributions to the study, including writing a submission prior to the panel meetings and giving detailed presentations to the wider academic panel (see Appendices 7 and

8). A review paper, exploring the international literature on measuring planning system performance, and relationships between planning and the housing market; as well as existing approaches to data collection and measurement across Australia, New Zealand, the US and the UK, was circulated prior to the meeting of academic panellists, along with two other conference papers prepared by members of the research team during the course of this study (Gurran & Phibbs 2011a, Gurran & Phibbs 2011b). Together with Professor Bramley's advisory note and Dr Austin's presentation, this material provided a starting point for deliberation over the two day meeting held 21–22 November 2011, at the University of Sydney. Following this meeting, a shorter discussion paper drew on this material to inform the meeting of policy maker and industry experts, held on 6 December 2011. Both meetings focused on the following four themes, in relation to the overarching research questions for the study:

- Overarching planning system goals, objectives or expectations, in relation to the housing market (supply and affordability).
- Appropriate indicators of performance against these objectives, and potential approaches to measurement.
- Current approaches to measuring planning and housing market performance in Australia, New Zealand, the UK, and the US, and the scope, depth and reliability of data sources used.
- Potential measurement frameworks for performance review or research.

The international jurisdictions were selected because of their comparable systems for planning and housing provision, although there are also important differences in structures of government, approaches to welfare distribution, and processes for plan making and development assessment. Such contextual factors are important considerations in comparable housing research (Kemeny & Lowe 1998), and were examined at some length through the panel discussions. In comparing the jurisdictions, panel deliberations also considered similarities and differences relating to planning system reform, infrastructure funding arrangements, and specific tools to encourage diverse and affordable housing supply. Wider approaches to measuring planning system performance, in relation to key policy objectives and decisions were discussed by panel members, as well as the potential to better use existing Australian data sources maintained at national, state, or local levels to monitor and review planning system performance, in relation to housing supply and affordability targets and more widely.

The panel meetings were recorded and notes summarising the flow of ideas in relation to the above four themes are contained in Appendices 5 and 6.

1.4 Report structure

From this introductory section, Sections 2 and 3 draw together key literature and panel discussions relating to two distinct bodies of research and policy: planning, performance measurement and evaluation; and the relationships between the planning system and the housing market. Section 4 draws on a review undertaken by the researchers as well as material submitted by panel members to provide an overview of current approaches to planning system performance measurement, in Australia, New Zealand, the UK and the US. In Section 5, potential applications of this data for wider measurement of planning performance, and more specific indicators of planning performance in relation to housing supply and affordability, are considered, drawing on panel deliberations and the advisory paper prepared by Professor Bramley for this study. The concluding Section 6 reviews the key findings of the study in

relation to each of the overarching research questions and the implications for developing a research framework for the Australian context.

2 QUANTIFYING PLANNING SYSTEM PERFORMANCE

There is a disparate body of international literature on theory, practice, and approaches to measuring the performance of the planning system, very little of which has originated from Australia. This section of the report incorporates a review of this literature prepared to inform the academic panel discussion (Gurran et al. 2011). We divide the literature loosely in relation to two strands. The first stems from the wider tradition of performance management in the public sector, focusing largely on the performance of the service aspects of planning practice (Mastop & Needham 1997, Carmona & Sieh 2008). The second, much wider body of research and literature focuses more on the extent to which planning achieves its stated objectives or results in other, unanticipated outcomes. Before turning to this work, it is important to establish an operational definition of planning and its key objectives and functions.

2.1 Defining planning

Planning is a complex process of decision making, intended to manage the multiple objectives and interests associated with urban and regional change and development. According to Patsy Healey, planning is:

A governance practice that has evolved to address the difficulties created by the complex collocation of activities and their relations and the impacts these collocations generate across space-time. It is a practice that is not merely concerned with managing existing relations but with imagining and opening up future potentialities for improving the conditions of daily life existence and enrichment for humans in their coexistence with each other and the rest of the animate and inanimate world ... It involves the formation and practicing of complex public realm judgements about what to do and how to do it. (Healey 2009, p.277).

Planning is characterised by both 'service-based' and 'product-based' activities (Carmona & Sieh 2008). As a decision-making process often situated within a bureaucratic structure defined by legislation, planning is a service oriented activity, and its stakeholders include government, private developers and the 'community'. The 'services' delivered include land allocation, infrastructure co-ordination, and planning permits. The 'products' of the planning process may include strategic plans, planning regulations or controls, or planning permissions to undertake development. Neither the planning process nor the products of this process should be confused with 'outcomes'—the actual patterns of development and associated social, economic, and environmental impacts over time and space. While planning 'services' and 'outputs' are intended to produce particular outcomes, a major difficulty in evaluation research is to demonstrate predictable and causal relationships between planned interventions and real world effects.

In economic terms, planning is often viewed more narrowly as a form of intervention in the land and property market, justified as a way to correct a range of potential market failures. These potential market failures include the need to protect against negative externalities arising from private development; the need to secure important public goods that the unregulated market might otherwise over-consume or under-provide (such as clean water supplies, or affordable housing opportunities); the need to overcome monopolies that might disrupt the supply of land for development; and the need to promote co-ordinated and efficient urban development by providing

information to actors in the development process about future patterns of infrastructure provision and private investment (through signals in the land use plan).

From an economic perspective, welfare distribution is maximised by a market operating in perfect competition. When an individual or group of sellers deliberately restrict the release of land for sale, a barrier to competition may arise (Barker 2006). Planning can counteract this by promoting opportunities for development elsewhere or enabling the compulsory acquisition of land critical to urban growth (Barker 2006). Similarly, information about what other actors are likely to do aids market efficiency. In relation to the land market and residential development, it is thought that investors gain confidence by knowing the future plans for land surrounding their potential site, including government plans to invest in the provision of major transportation or civic infrastructure. In this sense it has been argued that developers depend on the planning system as much as planners depend on developers to enact their plans (Barker 2006). The planning system provides a way of generating and disseminating this necessary information, although as discussed below, sometimes this information proves faulty due to implementation failure (Cottleer & Peerlings 2010).

2.2 Operation of the planning system

Planning operates within a bureaucratic context defined by legislation, which provides the source of power to establish an administrative framework and a context for regulation (the 'planning system'). Depending on the jurisdiction, this administrative framework may be expressed at different levels of government. For instance, national (e.g. the United Kingdom) or state (e.g. the United States and Australia), with more detailed activities carried out by local government authorities. The planning 'system' will enable a process for defining constraints and incentives—in other words, establishing rules or 'development controls' with criteria for deciding what can and cannot be undertaken on a parcel of land.

These criteria should reflect strategic, democratically determined spatial objectives (for instance, to integrate land use, transportation and infrastructure, to protect and enhance environmental and cultural features, and achieve efficient urban form), and are usually articulated within legally enforceable spatial plans and or ordinances. In some cases these controls may be contained within multiple instruments set by higher levels of government as well as local authorities. A key difference between jurisdictions is the extent to which controls are expressed through unambiguous codes and standards, guaranteeing approval for development that complies; and the extent to which decisions are made in a discretionary way by professional planners and or by elected officials.

Plans themselves only come into action when a change in land use regulated by the instrument is proposed—through the requirement for consent to carry out this activity (development). In this sense, unless the jurisdiction is characterised by significant government involvement as initiator (not only as regulator) of the development process, plans are dependent for their implementation on the private sector. This is why planning systems in a mixed market economy are often described as 'reactive' rather than 'proactive'—the existence of a plan cannot alone activate development.

The range of activities that are regulated through the planning system is also an important consideration in understanding the relationship between the planning system and the housing market. Some jurisdictions capture most aspects of housing development (including single dwellings and home alterations) within the planning system, with planning approval followed by a second tier of non-discretionary building regulation which articulates requirements for the *construction* process (like minimum

health and safety standards). Other jurisdictions regulate most aspects of housing production through building approval.

Planning systems also include provisions for public participation in the decision making process. Although these entitlements differ between jurisdictions, typically these include the right to be consulted about a change in land use plan as well as in relation to decisions regarding specific development proposals. Participatory opportunities may extend to the right to challenge planning decisions in a court of law.

Finally, planning systems typically include measures for financing the shared infrastructure on which private development depends, as well as the administrative planning system itself. This might occur through local authority taxation revenue whereby land use change influences property tax obligations; through charging systems (often called development contributions) to cover the marginal cost of new local infrastructure (such as roads, parks, or utilities); through constraints preventing new development where infrastructure is not provided or able to be provided by developers; through 'impact fees' designed to offset the financial 'impact' of servicing a particular development; and through 'betterment taxes' intended to recoup some of the hypothecated land value uplift accruing to property owners as the result of a planning decision.

There are many different variations of these financial mechanisms. One particular mechanism of particular interest to questions about the relationship between planning and the housing market is the collection of contributions for dedicated affordable housing, which may occur through requirements in relation to development in particular zones (such as the 'inclusionary zoning' system in parts of the US) (Calavita & Mallach 2010) or be negotiated on the basis of anticipated planning 'betterment' or 'gain', as in England (Whitehead 2007).

Bringing together the overall rationales for the planning system and the key operational attributes outlined above, it is possible to formulate an idealised role for planning intervention in the land and housing market. In simple terms, this entails allocating sufficient quantities of land in the right locations (vis-a-vis jobs, transport, services, and environmental / cultural amenities) for housing, having regard to existing and projected demographic trends. It also involves establishing appropriate development controls for the design and configuration of new housing, preventing negative impacts on existing areas, and promoting social equity (by permitting a diversity of housing types, by ensuring that housing opportunities are affordable to lower income groups, and by ensuring a fair distribution of costs associated with financing shared infrastructure).

To encourage competition between housing developers, a diversity of development opportunities must be maintained through spatial plans, either within a local authority area or, if the area contains limited development opportunities, within nearby alternatives. To promote market efficiency, spatial plans must be clear and provide certainty of future government intention, of the likelihood of particular developments gaining planning approval, and of the costs involved in obtaining such approval—which might include direct costs associated with complying with the planning process, such as fees, specialist studies, and development contributions, as well as time spent waiting for approval or undergoing legal challenge.

2.3 Measuring planning services and processes

Performance measurement and evaluation have become ubiquitous in the public sector, associated with demonstrating accountability and value for money in

government services. A variety of data collection and assessment techniques are used for different purposes.

Performance measurement and evaluation in relation to the planning system is often part of this wider government reporting process. Related processes include project or policy evaluation (designed to measure the impact of a particular project or policy); cost benefit and other forms of criterion analysis (designed to inform specific decisions). Key principles in designing an evaluation framework include clarifying the objectives of the service, system, or project under evaluation; specifying meaningful indicators of performance and impact over time, including data triangulation for validity; ensuring transparency and replicability of findings; efficiency and cost effectiveness.

There has been a nationally driven process of performance measures for spatial planning in England for more than a decade, although it has been argued that the data collected has not been particularly useful for local planning authorities (Carmona & Sieh 2008). Described as 'data rich and information poor', the focus has been on easily measured attributes insensitive to the multi-objective nature of planning (Carmona & Sieh 2008). Approaches to measuring planning performance in relation to housing outcomes in England are discussed further in the following section.

In relation to the Australian context, the push for 'performance information and evaluation' has been linked to the promotion of managerial reform across the Australian public service during the 1980s and 1990s (Guthrie & English 1997), reaching local government in the form of more stringent annual reporting (Murray & Dollery 2004). By the end of the first decade of the new millennium, many of the States and Territories had begun to publish data on the quantity and value of development applications, decision timeframes, rates of approvals and court appeals (Local Government and Planning Ministers' Council 2011). These are discussed further in Section 4.

2.4 Measuring planning outputs and outcomes

The second body of work relevant to planning performance focuses less on the process of planning and more on planning outputs (such as plans and projects), and outcomes (such as the implementation of planning objectives or requirements) (Oliveira & Pinho 2010, Lichfield & Prat 1998). This stream of plan evaluation often measures 'conformance' of planning outputs (consistency of plans, policies, projects, or decisions) with higher level policy objectives or mandates as the main criteria for implementation success. For instance, content analyses of local plans have been used to measure conformance with state planning mandates in relation to sprawl reduction in Florida (Brody et al. 2006) and affordable housing in Illinois (Hoch 2007) and to examine the local implementation of national sustainable development principles in New Zealand (Berke & Conroy 2000).

Studies of plan content often focus on the qualities of plans themselves, seeking to define the qualities of a 'good' plan as a basis for evaluation (Berke & Conroy 2000, Berke & Godschalk 2009). Others have sought to understand the factors influencing local environmental plan quality (Tang & Brody 2009).

Such work implies a relatively linear relationship between the quality of the planning framework and the implementation of planning objectives. However, these assumptions can be difficult to test due to the extended timeframes between plan preparation and 'implementation', which generally occurs through the process of regulating development proposed by the private sector over time. Scholars have also examined 'conformance' with planning objectives through analyses of plan permits

(Laurian et al. 2004), and GIS (geographic information system) data on patterns of development (Chapin et al. 2008, Goodman et al. 2010).

It has been argued that 'conformance' with plan requirements through the consistent application of regulations, might still fall short of anticipated plan 'performance', as demonstrated in relation to the Dutch case where urban containment policies were upheld through planning decisions but not achieved in practice due to a national stagnation of housing production (Altes 2006). Similarly a comparison of the outcomes associated with distinctly different local planning approaches within two similar municipalities in Ontario, Canada—one of which promoted higher density 'new urbanist' development, the other that followed a less restrictive philosophy—found limited difference in development outcomes over time, but that impacts were greatest during times of market buoyancy (Titus et al. 2009).

This latter work seeks to establish the difference that planning makes in a market economy characterised by a range of complex forces. The 'attributability gap' (Carmona & Sieh 2008) relates to the uncomfortable position of local planners able to influence, but not directly create, desired development outcomes:

In the case of planning, for example, authorities can undoubtedly influence the design quality of development, but are reliant on others to produce it. Attributing particular outcomes solely to planning actions therefore remains difficult. (Carmona & Sieh 2008, p.231)

Similarly, while there are undoubtedly unintended and unanticipated impacts of planning—these may be difficult to identify and address. This is particularly so in relation to the impact of planning regulation on the land and property market, which is the particular focus for this study.

2.5 Summary

Planning intervention in the land and property market is justified on the basis of improved social welfare (from a welfare economics perspective) and greater market efficiency (by improving certainty and reducing risk). Since the late 1980s public sector agencies in many parts of the world have been subject to increased performance assurance requirements, associated with the routine monitoring and evaluation of major services and projects. Planning authorities have been no exception. This has resulted in greater reportage on planning service performance, although the data generated through these evaluation processes does not always inform decisions about service enhancement or policy change (Carmona & Sieh 2008). Similarly, while there is an assumed relationship between the delivery of planning services and products, in actuality many different phenomena (such as the influence of individual actors, or the peaks and troughs of market trends) can intervene to influence outcomes, making it difficult to demonstrate causality. This has implications for designing a research framework to measure performance, particularly in relation to the housing market.

3 PLANNING, HOUSING SUPPLY AND AFFORDABILITY

The potential for land use planning to impact negatively on the price of housing has long been a concern of academics, policy makers, and the housing and development industry. Broadly speaking, these concerns follow the evolution of planning practice, from the introduction of basic interventions in the land and property market through early regulation and subdivision control explored by researchers since at least the 1960s (Crecine et al. 1967), to the spread of residential zoning and documented impacts for lower impact and ethnically diverse groups in the United States (Fischel 2004, Cowan 2006) and finally, the late 20th Century shift towards contained urban settlement through growth management controls (Landis 2006, Dawkins & Nelson 2002, Carruthers 2002b).

Since the turn of the millennium, such growth management policies have coincided with the confounding crisis of house price inflation but stagnant supply in many parts of the world, including the UK, parts of Europe, and in nations such as Australia and New Zealand. This co-incidence between declining rates of new housing supply, but escalating demand (rates of household formation) and rapid house price inflation, has focused concern on supply constraints as a major cause of declining housing affordability in the UK, Australia, and New Zealand. The resulting 'rediscovery of housing supply' as a key policy imperative (Bramley 2007) has rekindled interest in the relationships between land use planning and housing market outcomes.

This section of the report draws on a review of the literature on relationships between planning and the housing market, prepared to inform the academic panel discussion. The review was subsequently enhanced and extended through written submissions by the international panellists and through the panel deliberations.

3.1 Overview of the literature on planning and the housing market

The vast majority of research articles on the relationship between planning and the housing market originate from the US, with the balance of research largely undertaken in the UK, followed by Hong Kong. Some of the very earliest work was conducted in the US, focusing on the impact of the introduction of land use zoning on land values (Crecine et al. 1967, Dowall 1981, Dowall 1979), and reflecting concern for the impact of land use zoning on housing affordability, particularly for low income groups.

The growing concern for environmental sustainability and the need for sprawl reduction and urban containment, to protect biodiversity and farmlands through urban growth boundaries and other planning mechanisms to contain growth within existing areas or to limit new development, stimulated a specific trajectory of research in the United States (Nelson 1999), particularly in areas with strong growth controls such as Oregon (Wu & Cho 2007); California (Quigley et al. 2004, Neiman & Fernandez 2000, Lewis 2000, Gyourko et al. 2008); and Florida (Ihlanfeldt 2007, Anthony 2006, Anthony 2003). The impact of urban containment policies on housing supply and price has also been a focus of researchers in the UK (Monk & Whitehead 1999, Monk et al. 1996), the Netherlands (Altes 2006) and Australia (Buxton & Taylor 2011). Scholars have also examined planning controls and housing market outcomes in Hong Kong (Chiu 2007) and Nigeria (Egbu et al. 2007).

Most of these studies have used economic methods for modelling the impact of planning constraint on housing supply and prices. However some studies have focused on more qualitative indicators of developer behaviour. For example, Monk

and Whitehead (1996, 1999) used a combination of econometric data and in depth interviews with developers to understand developer reactions to perceptions about the planning process and the likelihood of gaining planning approval. Similarly, some studies have tried to measure the role of expectation in triggering development or housing market uplift, for instance, tracing fluctuating property prices in response to planning signal changes in the Netherlands (Cottleer & Peerlings 2010) and in Chicago (McDonald & Osuji 1995).

There have been very few comprehensive review studies of this field, with the exception of Dawkins and Nelson (2002) who focus on the issue of urban containment policies and house prices; White and Almendinger (2003), who compare studies from the UK and the US; and Burge and others (2007) who examine the literature on the effects of 'proportionate share' impact fees (intended to spread the cost of financing local infrastructure) on housing affordability and on new development. Related review studies examine the relationship between planning regulation and exclusionary social impacts (Ihlanfeldt 2004); and between planning and economic development.

3.2 Indicators of planning impact

Obtaining data on planning as a basis for measuring its impact on housing outcomes is a complex research problem, and the indicators selected could significantly affect research findings and implications. Some studies have sought to observe impacts following the introduction of new planning control or regime, such as the introduction of zoning (Zhou et al. 2008, McMillen & McDonald 1999) or environmental protections (Chamblee et al. 2009). Local authority investment in spatial planning activity has been used as a proxy for commitment to and engagement in, comprehensive planning in Florida (Ihlanfeldt 2009). Others have utilised spatial data to estimate development opportunity and constraint based on zone coverage (Hui & Ho 2003).

While the existence of a growth boundary is a relatively simple measure of planning constraint, other factors, such as the stringency of development requirements, are far more difficult to determine without detailed analysis of local planning controls. Further, as noted above, planning schemes differ greatly from locality to locality, with neighbouring local authorities often distinguished by quite different planning requirements (Gyourko et al. 2008). To address this problem, a number of scholars in the United States have undertaken surveys of local planning officials, or compiled databases of planning controls to determine the incidence of the key regulatory factors likely to affect housing development conditions (Lewis 2000, Levine 1999, Pendall 2000, Gyourko 2008, Glaeser & Ward 2009). Most of these studies construct indices of planning constraint as a basis for measuring difference to determine impacts on housing supply and price, controlling for endogenous spatial and geographical features of the housing market, and recognizing potential for lag time between the articulation of a planning control and its potential to influence patterns of development (Hui & Ho 2003).

Specific planning controls may have particular impacts on housing supply and price outcomes, and may also have differential impacts on particular segments of the market. Development contributions, or 'impact fees' have been a focus of specific attention, with scholars interested in the relationship between impact fees and house prices (Mathur et al. 2004b, Lawhon 2004), affordability for low income groups (Burge et al. 2007, Been 2005) and rates of housing production (Burge & Ihlanfeldt 2006a, Bluffstone et al. 2008). Another trajectory of research has focused specifically on the potential for planning requirements designed to secure affordable housing in new development to reduce overall rates of new housing production within a particular area or to raise overall house prices (Schuetz et al. 2011, Mukhija et al. 2010).

Similarly, the ways in which planning decisions are made may influence housing market outcomes, with Landis (2006) distinguishing between growth controls that ration planning permissions or decide applications by political vote.

3.3 Measuring planning constraint

The existence of a particular set of planning controls is no guarantee of implementation (Laurian et al. 2004). In relation to planning and residential development, this is demonstrated by a number of studies examining the implementation of specific planning controls designed to directly or indirectly influence patterns of housing provision, such as a planned growth boundary intended to promote housing supply and density within designated centres of Melbourne, Australia (Goodman et al. 2010); mixed use development in Ohio (Hirt 2007); in relation to urban containment strategies in Canada (Titus et al. 2009); and farmland conversion to housing in rural Scotland (Gelan et al. 2008). These studies call into question the reliability of research methods primarily dependent on measuring planning constraint by reference to specific control or policy setting data, since there is no guarantee if, how, and when, the control will be implemented.

The problem of measuring relative planning constraint is also an issue in jurisdictions where planning decisions largely involve a determination based on merit, rather than the application of a quantifiable control or code. In the UK, the problem of identifying measures of planning constraint has long been acknowledged (Bramley 1998) with the result that a number of creative indicators including the time taken to issue a planning permit (Ball 2010), and developer perceptions of the likelihood of gaining approval (Monk et al. 1996) have been used. Residential approval and refusal rates, and rates of planning appeals, might also be indicators of a responsive or sluggish planning system (Hui & Ho 2003). Such measures have become a focus for government reviews of planning system performance in relation to housing supply and affordability, particularly in the UK (Barker 2008), and, increasingly, in Australia, where local authorities are accountable for decision times and rates of residential development approval (Local Government and Planning Ministers' Council 2011).

Bramley's paper on 'Measuring Planning' in *Environment and Planning B* in 1998 was a unique and focused study on what were at that time the best ways of measuring the extent and nature of planning regulation at local level and its impact on new housing supply. It is interesting to revisit this paper in the present context, although some things have changed since then. The paper developed around a dozen measures but went on to show that these could be grouped into four main 'factors', of which the most important was 'unconstrained land', essentially a longer term picture of land potentially available after discounting built up area, Green Belt, Areas of Outstanding Natural Beauty (AONBs) and National Parks. Next in line and moderately important were the Structure Plan 'provision' numbers, similar to more recent Regional Spatial Strategy (RSS) targets for new housing, and the amounts of land with actual planning permission and sites allocated in local plans or by local authority resolutions. Taken together with some market variables, these were found to be the best predictors of key outputs, such as the flow of new planning permissions, or new build completions at local area scale. They also significantly influenced wider outcomes including house prices, density and the proportion of flats at the local level.

Other measures (some collected through a special survey of local authorities) captured the extent of second tier 'informal constraints' (e.g. green wedges and buffers), the importance assigned to 'environmental capacity', and recent changes in Structure Plan provisions. Also included were the 'success rate' of planning applications, although like some of the measures just mentioned this was a less

effective predictor (notwithstanding the key role assigned to it in certain other studies such as that of Cheshire and Sheppard (2004, 2005) and the more recent work by Hilber and Vermeulen (2009) who used both local authority refusal rates and planning delay data over a 35 year period as a proxy for regulatory constraint, asserting that such constraint had a significant impact on rates of housing supply and affordability).

However, Bramley's 1998 study highlighted a couple of issues arising when modelling with these indicators. One was that some of the indicators were logically linked to others in identity (definitional) relationships and one had to allow for that when interpreting the findings. Secondly, it was argued that several of these were partially endogenous in the sense of being influenced by the state of the market. For example, the success rate of planning applications partly reflected demand conditions, with high demand prompting more 'nonconforming' applications which inevitably had a lower success rate. Nevertheless, a limitation of the 1998 study and related papers was that they were essentially based on a couple of cross-sectional snapshots. More recent work has generally moved towards creating annual panel datasets, which are better for modelling market reactions, although not all the planning and land constraint variables are really time-varying even now.

3.4 Overview of key findings on measuring relationships between planning and the housing market

The range of potential housing market impacts identified is diverse, with indicators of potential impact focusing on land values, land supply, rates of new housing supply (sometimes measured in terms of supply elasticity), house prices, house rents, spill over effects on surrounding housing markets (increased construction or price), housing density and diversity, and developer certainty or confidence. Much of this work finds that planning is associated with higher house prices, due to value uplift (as regulations change to enable higher value uses) or supply constraint (actual or perceived controls preventing development or reducing potential yield, creating a shortage) (Monk & Whitehead 1999, Monk et al. 1996, Bramley & Leishman 2005, Sunding & Swoboda).

3.4.1 The price elasticity of housing supply and the impacts of planning

Evidence of the scale of price impact associated with planning induced supply constraints is complex, with studies from both the US and the UK suggesting that an extreme relaxation of planning controls (designed to increase rates of housing development) would be needed to appreciably impact on housing prices and affordability (Aura & Davidoff 2008, Ball et al. 2010). This is due to two factors; firstly, to ensure development at the required quantity it is necessary to over-allocate land, since not all available land will be taken up by developers; and, secondly, that the price elasticity of supply varies by location but is generally low (Ball et al. 2010). For instance, modelling of the price impacts of increased supply suggests that in parts of England, supply volumes would need to increase more than fourfold to achieve even a few percentage points reduction in housing sale prices (Bramley et al. 2008).

3.4.2 Planning requirements, land values, and house prices

Some studies suggest that planning requirements decrease land values (consistent with the expected impact of regulatory obligation) but increase house prices. This implies a demand effect associated with increased amenity created by planned urban development (Ihlanfeldt 2007). In a study of data drawn from over 100 cities in Florida Ihlanfeldt (2007) demonstrated that higher planning restriction was also associated with larger dwellings, thus influencing the overall form of housing supply. Research in the UK has also pointed to a reduction in the diversity of new housing provided under

systems of higher regulatory constraint, however, this is attributed to barriers to smaller developers gaining entry to a highly regulated market, reducing competition and resulting in greater homogeneity in housing development (Monk et al. 1996, Monk & Whitehead 1999). Ball and others (2010) show how larger developers are more able to respond to changes in housing supply and demand than smaller firms.

3.4.3 Spillovers

The potential for local planning constraints to have spillover impacts on neighbouring locations is also shown in the case of the UK, where housing supply and price outcomes were modelled in two case study areas having similar geographical and demographic characteristics, but perceived differences in planning control (Monk & Whitehead 1999).

3.4.4 Design of regulation

A number of studies qualify findings that the way in which a planning constraint is designed determines its impact on house prices. For instance, in his review of the price impacts of growth controls in Florida, Landis (2006) found that price impacts were associated with specific types of growth control measures described as 'closed' systems, and neutralised when localities ensured sufficient development opportunities to meet demand. Similarly, development contributions or 'impact fees' may discourage development if requirements are excessive and market conditions slow. However, impact fees can encourage housing supply by ensuring that local infrastructure is provided, to support development that might not otherwise have been able to proceed. For example, a western Sydney Council has argued that the recent reductions in developer charges has led to a reduction in housing supply as the Council cannot afford to finance the gap between the developer fees it collects and the actual costs of infrastructure (Penrith City Council 2012). Therefore, charges may increase housing supply but may also increase house prices as infrastructure is capitalised into home values (Burge & Ihlanfeldt 2006b).

3.4.5 Explaining differences in planning regulation and housing outcomes

Of the studies that considered the potential explanations for differences in local planning regulations, several referred to Central/State government policy positions or mandates as influential, alongside the interpretation of planning policy by local officials (Chamblee et al. 2009, Hui & Ho 2003, Monk & Whitehead 1999, Cotteleer & Peerlings 2010). However, a distinct trajectory of studies point to relationships between demographic characteristics and variations in local planning controls, as evidence of the 'endogenous' influence of property owner interests (Carruthers 2002a, Schuetz 2009, Quigley et al. 2004, Kahn 2011). Glaeser and Ward (2009) found that demographic factors as well as historical patterns of density were sufficient to explain variation in planning control across a substantial database of regulations applying to local jurisdictions in the State of Massachusetts, while demographic features have also partially explained propensity to adopt local impact fees in King County, Washington (Mathur et al. 2009).

This implies a somewhat circular relationship between local community interests, planning controls, and housing supply and price outcomes, making it difficult to determine causality. At least one study has used this modelled relationship to assert that planning controls actually follow, rather than drive, the market (Pogodzinski & Sass 1994).

3.5 Summary

In summary, while the weight of early empirical evidence suggests that planning can decrease rates of housing supply, while increasing house prices, much of this work is based on limited data sources and applies to specific jurisdictions. Later studies have confirmed relationships between increased planning regulation and house prices, but imply more complex causal explanations between the operation of the planning system overall or the specific control; the particular housing market setting or cycle; and particular characteristics of the local community. Several studies have also pointed to the potential for positive housing market outcomes to arise from specific forms of intervention, such as the effective use of impact fees to ensure local infrastructure provision (Mathur et al. 2004b), or the promulgation of clear controls to promote certainty and investor confidence (White & Allmendinger 2003).

The review of literature prepared to inform the panel discussion, and subsequent deliberation with academic panellists, suggests that planning system impacts on the housing market appear may be influenced by characteristics of the local planning system, such as the ways in which regulatory controls are expressed and implemented, or the degree of discretion versus codification in planning decisions; as well as overarching housing market conditions and fluctuations, with planning regulations likely to have differential impacts in rising and declining markets, and in high and low value settings. Finally, much of the research and literature on the relationships between planning and the housing market focuses on unintended impacts arising from regulation as a supply constraint. However, this narrow view ignores the wider spatial policy objectives associated with the planning system.

4 PLANNING SYSTEM PERFORMANCE AND HOUSING MARKET OUTCOMES: ARTICULATING OBJECTIVES AND APPROACHES TO MEASUREMENT

In Australia, formal performance measurement in relation to planning system indicators is a relatively recent process, although local government has been subject to performance review since the 1980s. In the UK and in parts of the US, government reporting of key housing and planning indicators as part of wider performance measurement frameworks is more established. This section of the report compares these approaches to emerging arrangements in Australia and New Zealand. It draws on material developed by the international panel members as well as presentations and deliberation at the two panel discussions held in November and December 2011 with researchers and policy/industry experts.

First, we outline key contextual differences characterising each of the four comparator nations included in this study. We then propose a performance measurement framework with reference to the panel discussions as well as the wider emergent objectives for Australian planning systems articulated through burgeoning national urban policy processes. Third, we review and compare actual processes and potential sources of data for measuring planning system performance and housing market outcomes. Our review of these processes and data sources is quite detailed, because the investigative panel process provided an important opportunity to scrutinise existing and potential data sources available in Australia in comparison to reporting frameworks established in other nations.

4.1 Contextual differences

When comparing approaches to performance measurement of planning and housing market systems, it is important to recognise contextual differences (Golland & Oxley 2004, Quilgars et al. 2009). Identifying contextual factors—for instance, systems of government, urban policy orientation, approaches to planning regulation, and broad housing market characteristics; provides a basis for ‘conceptual equivalence’ in comparative housing research (Golland & Oxley 2004, Milligan 2003). In relation to the present study, such contextual factors also influence overarching planning and housing system objectives and performance measures. For instance, stemming from the distributional system of land allocation and affordable housing provision in the UK, affordable housing has long been articulated as a national level planning consideration. By contrast, the market efficiency approach towards development and housing provision, adopted in the US, Australia and New Zealand might imply a rather different set of overarching policy objectives and performance criteria.

4.1.1 Structures of government and urban policy orientation

International panel members also emphasised the need to appreciate key underlying differences in the structures of government (e.g. the UK and New Zealand are characterised by national governments who retain responsibility for urban land use planning, while the US and Australia have federal systems with planning responsibilities situated between state and local governments). Panellists pointed to differing urban policy emphases (with the UK implementing urban containment policies since the 1980s, in part explained by its relative small size and high population base); while the other nations have had regionally varied experiences in promoting and implementing higher density housing against a traditionally low density suburban housing form.

4.1.2 Housing growth and demand

Patterns of housing growth and demand also differ between the jurisdictions. For instance, the UK experienced less rapid growth and development than Australia, although in the last 10-15 years the level of demographic growth and demand pressures have built up to a higher level with the onset of large scale net in-migration and the long economic upswing to 2007. This changing context brought housing supply back into the policy frame (Bramley 2007) and led to the 2004 Barker review of housing supply (Barker 2004) and subsequent policy measures to promote supply, largely through 'top-down' articulation of regional housing targets for local implementation. However, the current reform changes the emphasis within this basket of measures, away from top-down targeting towards more use of incentives in a localised system. At the same time the Global Financial Crisis (GFC) has impacted more severely on the UK leading to a prolonged downturn in the market and development activity. In Australia and New Zealand, as noted already there has also been widespread government and industry concern about a mismatch between housing demand and the supply of new homes, particularly over the past decade. In the US, the picture is more varied with areas of both affordable housing shortfall and other regions characterised by de-population, over supply of homes, and housing market decline and failure, again, exacerbated by the GFC.

4.1.3 Urban regulation

There are also key differences in systems of land use planning regulation. The UK system dating from 1947 entails the 'nationalization' of development rights (including change of use) and all development is subject to discretionary local decisions to grant or refuse planning permission. By contrast, the US is characterised by an emphasis on property rights, enshrined in implied development entitlements associated with the allocation of land use zones, although different jurisdictions have different thresholds to subjecting development types to discretionary review by professional staff or elected representatives. Australia and New Zealand are hybrids of the Anglo-American tradition, with emphases on land use zoning and codification of requirements, but an established process for merit assessment of most development forms, again varying between local authorities.

In all jurisdictions, planning decisions are bound by operative local development frameworks (plans or planning instruments) and the range of considerations set by national, state, regional, or local authorities. These local variations have resulted in idiosyncratic systems of land regulation at the local level, with potential localised and system wide implications for patterns of housing supply. Even in relatively small jurisdiction of New Zealand, there is significant heterogeneity of local planning controls, with around 300 different zones across New Zealand, none of which are exactly alike. Addressing local planning inconsistency through the introduction of standardised provisions or codes, has been an ongoing theme of planning reform across all of the jurisdictions involved in this study, but particularly in Australia.

4.2 Objectives for planning system and housing market performance

Bearing these contextual factors in mind, panel members advocated a set of planning system and housing market performance objectives that reflect both a normative or universal set of expectations for spatial planning policy and housing markets (such as the goal of ecologically sustainable development, with its emphasis on social fairness alongside ecosystem protection and enhancement, and balanced economic growth); as well as governance, administrative, or system level objectives (like efficiency, and

equitable distribution of resources). At the same time, panellists advised that overarching objectives could also be developed, derived, or identified, in a more grounded way, with reference to the endogenous characteristics of the spatial area in question, and a qualitative analysis of existing national, state, regional, or local level policies, strategies or plans.

4.2.1 Normative spatial policy and planning system objectives

Panellists emphasised the need to contextualise planning performance measurement within a holistic view of spatial policy and planning objectives, rather than focus on a narrow policy interest (such as housing supply and affordability). This is because planning frameworks are intended to be integrative, providing a basis for balancing potentially competing goals in the optimal way. As a crude example, it is often argued that any affordability gains achieved by liberating housing development from accessibility criteria would be undermined by higher transportation costs as well as larger societal burdens associated with additional infrastructure provision and traffic congestion.

Comprehensive goals proposed by the panellists included the efficiency of urban form (accessibility to jobs, services, leisure facilities, jobs / housing mix, provision of public transport and active transport); urban environmental quality and biodiversity protection, and a mix of housing types and tenures. Practitioner panellists emphasised the need to align overall strategic spatial objectives (often articulated in guiding policies) with the regulatory planning instruments for implementation. Such alignment between strategic policy and plans might itself become a performance measure.

Objectives for the operation of the planning system proposed by panel members include: the capacity to clearly articulate spatial policy goals at all levels, and to support these through implementation tools such as regulatory instruments, funding, and the alignment of land use planning and infrastructure; genuine consultation and engagement; and speed, efficiency, certainty and consistency in decision making. Members of the practitioner panel emphasised the need for a planning system to 'enable rather than frustrate' development; and for spatial plans to be achievable and feasible—able to be delivered by the private sector.

Finally, panellists emphasised the non-market role of the planning system to secure community outcomes that might not necessarily be delivered by the private sector without planning intervention: 'not all spatial goals will be commercially viable' (panel member, December 2011).

4.2.2 Australian spatial policy and planning system objectives

With particular reference to Australia, panellists pointed to a basis for implying national level spatial policy and planning system goals with reference to three specific processes:

- The establishment of planning performance criteria for Capital Cities, against which future Commonwealth infrastructure funding decisions are to be assessed (COAG Reform Council 2009).
- The housing supply and affordability reform agenda (COAG 2010) which emphasises the need to examine 'zoning and planning approval processes, infrastructure charges, environmental regulations and the identification of underutilised land' (Productivity Commission 2010, p.331).

- The ongoing implementation of the National Reform Agenda (formerly the National Competition Policy), with its emphasis on reform of development assessment processes (COAG Reform Council 2010b).

Additionally, in 2011 the Federal Government released a National Urban Policy, for the first time, setting out aspirational goals and principles for the planning and governance of Australian cities and regions. The National Urban Policy articulates three overarching goals:

- **Productivity:** To harness the productivity of Australia's people and industry, by better managing our use of labour, creativity and knowledge, land and infrastructure.
- **Sustainability:** To advance the sustainability of Australia's natural and built environment, including through better resource and risk management.
- **Liveability:** To enhance the liveability of our cities by promoting better urban design, planning and affordable access to recreational, cultural and community facilities. (MCU 2011, p.19)

More detailed objectives are specified in relation to these goals as well as to support effective urban governance. Of these, objectives particularly relevant to the spatial planning system relate to integrating land use and infrastructure and protecting and sustaining the natural and built environments. A series of objectives focus on climate change—reducing greenhouse gas emissions and improving air quality, increasing resilience to climate change, and improving accessibility and reducing dependence on private vehicles. Supporting community wellbeing by providing access to social and economic opportunity by redressing spatially concentrated disadvantage is also an objective of the policy. Specific housing objectives articulated in the National Urban Policy (summarised from MCU 2011, p.19-20) include:

- Facilitating the supply of appropriate mixed income housing by encouraging a range of housing types to suit diverse household needs across metropolitan areas and regional cities.
- Supporting affordable living choices by locating housing close to facilities and services, including jobs and public transport, in more compact mixed use development.
- Supporting new outer metropolitan housing with access to facilities, services and diverse education and employment opportunities.
- Specific objectives relating to the planning systems include improving the planning and management of cities by facilitating a whole-of-governments approach.
- Integrating planning systems, infrastructure delivery and management and streamlining administrative processes by improving the effectiveness and efficiency of approval processes for development, and encouraging participation and engagement with stakeholders.

Panel participants referred to these framework criteria as baseline points of reference; adding a number of more specific performance goals, relating to the planning system, spatial policy outcomes, and the housing market, which they emphasised should also be articulated for regional and local scales (Appendix 5).

In relation to housing, panellists proposed a number of additional system objectives and measures:

- Net overall housing supply gain, in terms of new homes 'up and occupied' (that is, panellists argued that the measurable objective should be the number of dwellings

completed and occupied, rather than the quantity of land rezoned for residential development, or applications approved.

- The location of new dwellings (to support local housing markets and avoid the risk of blight or demand failure).
- The appropriateness of dwellings having regard to household composition, housing quality and the quality of the environment.
- The spread of tenure options achieved in new developments.
- The range of different price points and the inclusion of affordable housing.

However, it was recognised that several of these housing objectives are not currently fully embedded within Australian urban policy. As such, objectives are increasingly articulated at state, regional, and local levels; measures of performance—for instance, the quantity of housing affordable to those on low and moderate income households within a local government area—will become important.

4.3 Measuring housing supply and affordability trends, and planning system performance in Australia

Investigative panel members emphasised a lack of systematic data collection and performance review in relation to Australian spatial policy, urban development, and the housing market. However, as noted, several new processes have emerged in the past three years, including State of Australian Cities reporting (managed by the Commonwealth Government's Major Cities Unit); the COAG review of capital city strategic planning systems; state of housing supply reporting (managed by the National Housing Supply Council); and varying levels of state/territorial data collection. There have also been a series of one off national and state/territorial level inquiries about planning systems and development assessment performance, such as the Productivity Commission's benchmarking study of zoning and planning approval processes (Productivity Commission 2011).

4.3.1 State of Australian Cities

The introduction of annual State of Australian Cities (SOAC) reporting (MCU 2010) in 2010 provides headline indicators of urban trends. The SOAC reports draw predominantly on ABS data, but also refer to published international survey data comparing, for example, cost of living and quality of life in Australian cities to global comparators. Key thematic areas relate to population growth and change, urban settlement, productivity, sustainability, liveability, social inclusion and governance. The second SOAC Report, for 2011, builds on the initial publication, providing updated figures and commentary for performance data that is collected annually. While broadly consistent in terms of key themes, the 2011 Report provides a more detailed analysis of select issues identified in 2010, notably, population growth, commuter flows and inter-city migration (MCU 2011). Overall, while the data contained in the SOAC reports provides useful context and, potentially, a basis for international comparisons, the scale of reporting is very broad.

4.3.2 Review of capital city strategic planning systems

As noted, the COAG has articulated nine broad criteria for Capital City Planning Systems.

Capital city strategic planning systems should:

1. Be integrated:

- a. across functions, including land-use and transport planning, economic and infrastructure development, environmental assessment and urban development, and
 - b. across government agencies;
- 2. Provide for a consistent hierarchy of future oriented and publicly available plans, including:
 - a. long term (for example, 15-30 year) integrated strategic plans,
 - b. medium term (for example, 5-15 year) prioritised infrastructure and land-use plans, and
 - c. near-term prioritised infrastructure project pipeline backed by appropriately detailed project plans;
- 3. Provide for nationally-significant economic infrastructure (both new and upgrade of existing) including:
 - a. transport corridors,
 - b. international gateways,
 - c. intermodal connections,
 - d. major communications and utilities infrastructure, and
 - e. reservation of appropriate lands to support future expansion;
- 4. Address nationally-significant policy issues including:
 - a. population growth and demographic change,
 - b. productivity and global competitiveness,
 - c. climate change mitigation and adaptation,
 - d. efficient development and use of existing and new infrastructure and other public assets,
 - e. connectivity of people to jobs and businesses to markets,
 - f. development of major urban corridors,
 - g. social inclusion,
 - h. health, liveability, and community wellbeing,
 - i. housing affordability, and
 - j. matters of national environmental significance.
- 5. Consider and strengthen the networks between capital cities and major regional centres, and other important domestic and international connections;
- 6. Provide for planned, sequenced and evidence-based land release and an appropriate balance of infill and greenfields development;
- 7. Clearly identify priorities for investment and policy effort by governments, and provide an effective framework for private sector investment and innovation;
- 8. Encourage world-class urban design and architecture; and
- 9. Provide effective implementation arrangements and supporting mechanisms, including:
 - a. clear accountabilities, timelines and appropriate performance measures,

- b. coordination between all three levels of government, with opportunities for Commonwealth and Local Government input, and linked, streamlined and efficient approval processes including under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999,
- c. evaluation and review cycles that support the need for balance between flexibility and certainty, including trigger points that identify the need for change in policy settings, and
- d. appropriate consultation and engagement with external stakeholders, experts and the wider community. ([COAG Reform Council 2009](#))

While these are relevant criteria for planning system performance (particularly if able to be integrated with expectations arising from the National Urban Policy framework), actual performance data is highly variable (KPMG 2010). An expert advisory council will provide a final report on planning system performance to COAG during 2012.

4.3.3 Housing

The establishment of the National Housing Supply Council (NHSC) in 2008, and the release of annual reports (NHSC 2010b, NHSC 2011); provided an important basis for understanding and monitoring housing supply and affordability trends at city, state / territorial, and national scales. Similarly, annual performance monitoring by the States and Territories under the National Affordable Housing Agreement (COAG Reform Council 2010a, COAG Reform Council 2011a) provides data on housing needs and market trends, but again at a broad geographical scale. However, some jurisdictions, such as NSW, maintain local government area level data on housing market trends (including rental and sale price trends, by dwelling type)—the NSW Rent and Sales Report has been published quarterly since 1997 (with data on rents dating from 1987).

4.3.4 Development performance reporting

Development Assessment is a specific emphasis of the COAG reform process, which seeks to cut the 'costs of regulation' ... by improving 'development assessment processes to provide greater certainty and efficiency in the development and construction sector by reducing regulatory burdens and delays' (Local Government and Planning Ministers' Council 2011, p.3). As part of this process, a set of 'common performance measures across development assessment systems in Australia' have been identified (Local Government and Planning Ministers' Council 2011, p.3).

These National Performance Measures distinguish between:

- process performance (timeliness and compliance with statutory timeframes for development assessment)
- system performance (the proportion of developments assessed under different levels of assessment; and the extent to which electronic development assessment systems are being taken up)
- outcome performance (effectiveness of policy objectives, measured by proportion of matters challenged in appeal).

The first report, based on 2008/09 data provided by the states and territories, shows that very limited monitoring and reporting of local planning activities currently occurs in most jurisdictions. The exceptions are NSW, South Australia, and Victoria, which maintain annual reports of a comprehensive range of local planning indicators including:

- determined development applications
- assessment times

- changes to development applications following approval
- code assessed developments
- internal reviews and court appeals.

In addition to these data, NSW publishes annual performance reports on local government planning activity (since 2006-07) and on major projects determined by the state. It also provides update reports in relation to regional strategies. In Victoria, councils submit monthly electronic data through an automated process linked to their planning application system, including data on planning permits lodged and determined since July 2007. In South Australia, all planning bodies (the Development Assessment Commission, the Department of Planning and Local Government, referral agencies, private certifiers, and the court are required to make quarterly reports against 'system indicators' (Local Government and Planning Ministers' Council 2011 p.12). The other jurisdictions are developing reporting approaches consistent with the National Performance Measures on process, system and outcome performance.

Commonwealth data on applications for environmental assessment and approvals under the *EPBC Act 1999* is also reported through annual reports, with statistics maintained by jurisdiction (state/territory or Commonwealth) and by project.

At state or territorial levels, potential sources of data also include monitoring of land release under metropolitan land development programs such as the NSW Metropolitan Development Program (Metropolitan Development Program 2009), although data collection processes are often patchy. Western Australia, Victoria and Queensland also report on land release trends, at different levels of detail.

4.3.5 Government inquiries on planning systems and development assessment performance

The COAG Reform Council contracted the Productivity Commission to undertake a 'Performance Benchmarking' study on planning, zoning and development assessments. The study was completed in April 2011. Although not an ongoing basis for performance reporting, the study process commissioned research against several local government area scale indicators of the functioning of Australian cities. In addition to existing ABS measures such as population density, building approval trends, and price data, the study also commissioned a community survey containing new measures such as: travel times to work (reported at LGA scale by urban area); sense of 'safety and community' (reported at LGA scale by urban area); and community attitudes to increased population (capital cities and selected other cities) and development (attitudes towards different development types, selected cities). A cluster of questions explored community views about state/territorial government performance in planning and zoning; and local planning processes (reported by urban area).

Indicators relevant to comparing different local government performance include: local council planning related income (reported in aggregate); planning staff resources (reported by state); proportion of staff time devoted to planning activities in local government (median by state); council expenditure on involving the community as a percentage of total expenditure (by state jurisdiction); and developer contributions received by councils with Greenfield development areas (sample of local government areas per capital city, minimums and maximum contributions and contributions as share of council revenue reported). This is the only consolidated source of data on development contributions, reflecting the difficulties of collecting such information due to the variability of local area requirements.

Efficiency measures included time taken to deliver new land supply (i.e. reclassification / rezoning for urban development) by capital city planning areas (timeframe range), and the average number of land use zones in local planning schemes (by capital city).

Many of the states and territories have undertaken their own inquiries into planning system performance over the past decade, as part of wider reform agendas (Government of Western Australia 2009, Government of South Australia 2009, Department of Sustainability and Environment 2006). A major emphasis of these investigations has been to identify opportunities to 'reduce red tape' and achieve faster decision times in plan making and development assessment processes, and reports include related point in time data.

4.3.6 Non-government and industry sources

There are a number of other performance measurement approaches and potential sources of data, sitting beyond these formal reporting processes. These include emerging systems for sustainability rating of buildings, developments, and communities. For instance, the Green Building Council Australia is developing a framework of five sustainability indicators to underpin a new green rating tool and certification system (Green Building Council Australia 2011). In an unrelated initiative, the Property Council of Australia recently commissioned a survey on attitudes towards the liveability of Australian cities and perceptions of government's performance in the urban policy area, particularly in regards to infrastructure, affordable housing and the environment (Stolper 2011).

The Australian Urban Land Use Policy Monitor (AULUP) maintains data on the content of the planning instruments (as at 2009) pertaining to over a third of local government areas, focusing on the existence of controls for housing density, diversity and affordability, and the inclusion of measures for sustainable urban form, transportation, biodiversity conservation, and resource management. A second survey will be undertaken in late 2012. The University of Sydney holds these data.

In the future other data repositories such as the pending Australian Urban Research Infrastructure Network (AURIN), being organised through the University of Melbourne, may also provide a resource for better understanding relationships between urban land use planning, housing supply and affordability outcomes, in the context of wider urban and regional goals.

4.4 New Zealand

In New Zealand, performance in processing planning applications is monitored under the principle Resource Management Act 1990, which sets the framework for planning in New Zealand. Key measures include refusal rates, numbers of notifications (exhibition of proposals for community consultation), timeliness in determinations, and appeals against decisions. Financial penalties apply for councils who exceed the statutory timeframe for development assessment, resulting in a noticeable reduction in decision times across the nation.

4.5 The United Kingdom

In comparison to Australia and New Zealand, a deeper and more integrated approach to measuring planning system performance and housing market trends has been established in the UK, although at the time of writing this system was under review.

4.5.1 National Indicator Set (NIS)

The NIS was a set of indicators used by central government to performance manage local government, collected from April 2008 to March 2011. The NIS was developed following the 2007 government spending review, replacing Best Value Performance Indicators. The NIS covered services delivered by local authorities, including planning. Examples of indicators include net additional homes; the gross number of affordable homes delivered; the number of households living in temporary accommodation; the percentage of non-decent council homes; the supply of ready to develop housing sites; and efficiency in processing of applications (Audit Commission 2012).

Performance against indicators was published annually by the Audit Commission until May 2010. DCLG stopped all National Indicator (NI) associated data collection on 31 March 2011. However, some of the data gathered through NIS will continue to be collected through the single data list for local government (detailed below).

4.5.2 The single data list

The single data list, which was published in April 2011, is a catalogue of the minimum data which local governments will be required to submit to central government each year. While some data submission requirements are currently under review, the list provides a fairly comprehensive summary of the local authority level data central government will collect in future including: house building data; the Housing Strategy Statistical Appendix (under review); the Annual Monitoring Report (under review); developments in flood risk areas; and local area housing assistance data such as housing benefit and council tax benefit subsidy estimates and claims, as well as lettings by local authorities (DCLG 2011d).

4.5.3 Department for Communities and Local Government (DCLG) Information Strategy

The information strategy is part of the Department for Communities and Local Government's (DCLG) business plan for 2011-15. It summarises the datasets which the Department will consult when making key policy decisions. The list includes data that is currently collected (including an explanation of what is measured and which organisation / level of government is responsible for collection). The information strategy also lists data which will be collected in future (with an anticipated date for availability given) (DCLG 2011b).

The table below shows a selection of the data that DCLG will consult (as listed in the information strategy under 'Housing' and 'Planning, Building and the Environment').

Table 2: DCLG Reference data for Housing, Planning, Building and the Environment

Data	Description
House Building Statistics	Includes new build housing starts and completions; collected by local authorities.
Affordable Housing Supply	From Homes and Communities Agency data and local authorities; covers local authority areas, regions and England.
Housing Stock	Net supply of housing / dwelling stock estimates; collected by local authorities.
Financial Services Authority mortgage market statistics	Statistics on mortgage lending activity in UK; raw data collected by regulated mortgage lenders and administrators.
Environmental	Data on newly constructed homes meeting Code for Sustainable Homes

Data	Description
Performance of Buildings	standards and energy efficiency (SAP) ratings; collected by service providers.
Housing Market and House Prices	Mix adjusted house prices (also mortgages, property transactions and land prices); collected by the Council of Mortgage Lenders.
Planning Application Statistics	Data on applications received and outcomes; collected by local authorities.
Five Year Land Supply for Housing	Based on reported assessments of five year land supply by local authorities in England.

Source: the authors; information derived from DCLG 2011b

This data will be used by central government to report on a number of impact and input indicators (which will assist in determining whether policies and reforms are having the desired effect; and be used in reporting to the public).

Input indicators include affordable rent payment per dwelling by HCA and average new homes bonus grant per dwelling per year, by class of authority (DCLG 2011a).

Impact indicators provide a measure of planning and housing market performance, and include: housing starts and completions; net additions to housing stock; affordable housing starts and completions; energy efficiency of new housing; number of households in temporary accommodation; and the number of planning permissions granted as a percentage of major and minor applications received.

4.5.4 The Housing Strategy Statistical Appendix (HSSA)

The HSSA includes a range of information (at local authority level) on housing stock, housing needs, delivery of new housing and how affordable housing is being funded, returned to DCLG by local authorities. Published annually by DCLG, the information is intended to assist in formulating housing strategies (DCLG 2011c). However, the data provides a basis for wider research and performance analysis.

4.5.5 Welsh Performance Indicators

In 2000/01 Welsh local planning authorities agreed a set of Wales-specific performance indicators and a new set of indicators was introduced in 2005 (updated annually). Welsh local authorities have a legal duty to collect and report on these National Strategic Indicators. For instance, performance indicators address system efficiency (timeliness); consistency (percentage of planning appeals upholding an authority's decision); urban containment and Brownfield development (proportion of additional housing units provided during the year on previously developed land; and, affordable housing (the number of additional affordable housing units provided during the year as a percentage of all additional housing units, also a National Strategic Indicator). Guidance is given on each indicator, including formula to use for determining numeric indicators (Local Government Data Unit - Wales 2011).

4.5.6 Annual Monitoring Reports

Annual Monitoring Reports (AMRs), which are published by local authorities each year, detail progress made towards implementing their Local Development Framework (LDF) and more specifically, towards achieving the targets set out in the council's more detailed development plan documents. This fulfils local governments' statutory duty to monitor planning policy outcomes and report to both central government and to the public. If a local authority is failing to achieve its LDF targets (previously, also targets set out in the Regional Spatial Strategy), the AMR must propose actions to close the performance gap.

In summary, requirements relate to the timeliness of strategic planning processes (progress against the timetable for preparing local development framework documents) and implementation performance - that is, progress towards achieving the policies and targets set out in local development documents, as well as relevant national and regional targets. Where targets are not being met, or where policies have had significant unintended effects, ameliorative actions must be identified. Authorities must also report on how infrastructure providers have performed against the infrastructure requirements necessary to achieve the council's core strategy.

Progress against 'core output indicators' should also be reported. Core output indicators are key statistics which local authorities can include in AMRs, for instance, net additional dwellings in previous years and for the reporting year; new and converted dwellings on previously developed land; and gross affordable housing completions. Based on set formula, these statistics allow for comparisons to be made between local authority areas and within a given local authority area year to year. They are intended to help local authorities review their spatial strategies and monitor their progress. Three core output indicators correlate directly with national indicators, although their status is somewhat unclear following the end of the National Indicator Set. The AMR itself is also under review.

Notwithstanding the apparent comprehensiveness of the approaches reviewed here, UK panellist Professor Bramley expressed the view that approaches to data collection and review have been uneven and unsatisfactory, and may deteriorate significantly as a consequence of the new national policy agenda of localism and the reduction in the 'burden' of information returns expected of local authorities. His remarks demonstrate the real world difficulties associated with obtaining and sustaining reliable data on urban policy and housing market outcomes, even within jurisdictions with a strong tradition of establishing policy objectives, targets, and processes for reporting against performance.

4.6 The United States

Like Australia, the Federal system of government in the US has meant that different approaches to the establishment of overarching spatial policy and housing market objectives, performance measures, and approaches to data collection, at national level and across the States have evolved, with considerable variability. For our study, we undertook an overview of national level approaches, then examined three states, Washington, California, and Massachusetts, chosen because of their long established traditions of promoting housing objectives through the planning process (Calavita & Grimes 1998, Varady & Birdsall 1991).

4.6.1 National

The U.S. Department of Housing and Urban Development (HUD) is a cabinet-level agency that administers housing and community development programs across the United States. These range from housing finance and housing market recovery initiatives to Indian and public housing programs. HUD also engages in policy development and research. Housing-related data to inform and support the Department's policy and funding decisions is collected and maintained by HUD's Office of Policy Development and Research. The data collected by the office is publically available and is utilised by a range of organisations, including the federal government. Quantitative housing data is collected and made available through several datasets including the national American Housing Survey and the Property Owners and Managers Survey. Like Australia, the US also maintains state of the cities data systems (HUD 2002). The table below outlines a selection of the datasets in greater detail.

Table 3: Description of select HUD USER datasets

Dataset	Description	Source	Scope	Frequency	Date range
50th Percentile Rent Estimates	Estimate of 50th percentile (or median) rents for 0–4 bedroom properties	HUD USER	County	Annual	From 2011
Residential Finance Survey (2001)	Data pertaining to mortgage types, mortgage debt, purchase prices, characteristics of properties and buyers.	U.S. Census Bureau	National	Decennial	1991 and 2001
American Housing Survey (National)	Data collected by the US Census Bureau on dwelling stock, vacant homes, family composition, neighbourhood quality, housing costs, size of housing units, recent movers and more. Occupants of approximately 55 000 dwellings are interviewed on a biennial basis. The dwellings in the sample remain constant, although units are added and deleted where applicable.	U.S. Census Bureau	National	Biennial	1973—present (consistent sample from 1985)
American Housing Survey (Metropolitan Data)	This survey parallels the national-level survey, focusing on 47 metropolitan areas. The sample for each metropolitan area includes at least 3200 dwellings. Householders are interviewed every 6 years (US Census Bureau 2004).	U.S. Census Bureau	Select metro areas	Every 6 years	1973—present (dates for individual metropolitan areas varies)

Dataset	Description	Source	Scope	Frequency	Date range
Consolidated Planning / Comprehensive Housing Affordability Strategy (CHAS) Data.	<p>Estimated number of households in need of housing assistance across the U.S. and characteristics of households in need. Intended to assist local housing planners and policy makers in allocating resources and provide evidence to support HUD's grant decisions.</p> <p>Variables which are assessed in the dataset include: housing tenure; housing problems (inadequate kitchen or plumbing, more than 1 person per room, housing costs greater than 30%); degree of housing problem severity; household income; housing costs; race; family status; household type; year structure built; number of bedrooms.</p> <p>For a selected location (ex. State, county, municipality), the user can view the estimated number of people, households or housing units to which the variable, or variables, apply.</p>	U.S. Census Bureau	State, County, Census Place, Minor Civil Division.		2006-08 (3 year average).
State of the Cities Data Systems (SOCDS)	This collection includes current employment statistics for city residents; FBI crime data; Building permits database (details below); Urban public finance data (details below).			Monthly, annual, sporadic (varies by database)	Periodic 1970-2009
SOCDS Building Permits Database	<p>This dataset lists the number of building permits issued for individual units monthly or annually by State, County or jurisdiction. Categories include: Units in single family structure; multi-family structure; multi-family structure including up to 2 unit, 3-4 unit; 5+ units.</p> <p>Note that figures for the current year (2011) may be revised.</p>	U.S. Census Bureau (Census of Governments)	State, County or jurisdiction	Monthly	2001-11
Housing Affordability Data System	Collection of datasets on housing affordability and burden of household costs relative to median incomes, poverty level incomes and fair market rents. Main sources for these datasets are the American Housing Survey and correlating metropolitan level survey. Fair market rents and median income is calculated by HUD (Vandenbroucke 2011).	U.S.		Biennial	1985-2009

Source: the authors; information derived from HUD

More qualitative case studies on housing delivery are recorded, collected and disseminated through the Regulatory Barriers Clearinghouse (RBC), which is hosted by HUD (HUD 2012). The RBC was established following the American Home Ownership and Economic Opportunity Act 2000 to assemble and disseminate information about overcoming barriers to affordable housing delivery, including information on administrative processes and streamlining; building and housing codes; fair housing and neighbourhood de-concentration; fees and dedications; planning growth and restrictions; rent controls; redevelopment / infill; and zoning, land development, construction and subdivision regulations.

4.6.2 US Census Bureau

Amongst the information collected by the US Census Bureau is a series of data on construction expenditure and residential sales. Construction spending is monitored through the U.S. Census Bureau's *Value of Construction Put in Place Survey*. The value of public (State / local and federal) and private construction is reported monthly by building type / use (US Census Bureau 2011). Data on new residential sales, described in the table below, is collected through the Census Bureau's *Survey of Construction* (US Census Bureau 2010).

Table 4: US Census Bureau on new residential sales

Title	Description	Scale	Frequency
Construction Price Indexes	Constant Quality Price Index of New One-Family Houses Sold; Constant Quality Price Index of New One-Family Houses Under Construction; Price Deflator (Fisher) Index of New One-Family Houses Under Construction.	National	Monthly 1964-2011
New Houses Sold by Sales Price	Number of houses sold in different price categories; Median and Average Sales Price; New Houses Sold by Type of Financing (national only); Median and Average Sales Price by Type of Financing (national only);	National, Region (i.e. Midwest, South, West, Northeast)	Quarterly and annually 2008-11
Characteristics of New Housing	Number of single family homes (completed or sold) and number of multifamily homes (completed) with specified characteristics including: central air-conditioning; Number of bedrooms and bathrooms; exterior wall material; type of foundation; Square feet of floor area; type of parking; Characteristics of contractor built houses, including price and price per square foot.	National (some regional data available)	Varies by characteristic selected

Source: the authors; information derived from the U.S. Census Bureau.

4.6.3 State and local level approaches to planning system and housing market performance measurement

As noted, there is wide variety in planning systems across the US, and approaches to articulating performance objectives and measuring outcomes differ markedly. To explore these approaches, we selected three states having relatively detailed data

sets available for review: Washington, California, and Massachusetts. To provide further insight to the range of performance measures and data collection undertaken at local and regional scales, we also focused on a local level jurisdiction, King County in Washington, and a regional metropolitan area (Boston in Massachusetts).

4.6.4 Washington State

Washington State's Growth Management Act (GMA), which was enacted in 1990 and 1991, introduced a requirement for comprehensive plans for each jurisdiction and County in Washington State, establishing a potential framework for spatial policy objectives and performance review. The significance of this framework is demonstrated further below in relation to the range of measures addressed by the local authority of King County.

At the state level, the Washington Centre for Real Estate Research (within Washington State University) publishes quarterly and annual data on the Washington housing market, as summarised in the table below (Board of Regents 2012). As shown in the table, indicators include home resales (number, percentage change from previous quarter and percentage change from same quarter previous year); building permits (number of units and percentage change from same quarter in previous year); median resale price (value and percentage change from same quarter in previous year); a housing affordability index; a first time buyer affordability index; and data on the total housing stock (inventory). The full report is preceded by a 'snapshot' of headline indicators.

Table 5: Washington State housing data

Title of data	Description
Existing home sales (Seasonally-adjusted annual rate)	County and state levels
Existing home sales (Not seasonally adjusted rate)	County and state levels
Median home prices	County and state levels
Home prices by number of bedrooms	2, 3 and 4+ bedrooms; county and state levels
Housing affordability index—quarterly	County and state levels
Housing affordability index—time trend	County and state levels
Housing affordability index—first-time buyers	County and state levels
Percentage of homes on market below specified price	County and state levels
Listings available for sale	Percentage of homes priced under \$80 000, \$160 000, \$250 000, \$500 000; County and state levels
Month's supply of housing by price range	Month's supply under \$80 000, \$80 000–\$159 999, \$160 000–\$249 999, \$250 000–\$499 000, \$500 000 and above; county and state levels
Residential building permits—units authorized	Total number of residential building permits granted; total number of building permits granted for single family homes; County and state level

Title of data	Description
Residential building permits—value authorized	Cumulative value of all residential building permits granted; cumulative value of permits granted for single family dwellings (attached and detached); county and state levels
Residential building permits—annual total	Number of permits granted; annually data for 2001-10; county and state level
Residential building permits—value authorised—annual total	Total value of permits; total value of permits for 2-4 unit properties; total value of permits for 5+ unit properties; annually data for 2008-10; county and state levels
Single family building permits—annual totals	Number of permits granted; county and state levels
Total housing inventory	Total housing stock in 2000 and all years 2003-10; percentage change between 2000 and 2010; county and state levels
Single family housing inventory—year end	Annual total in 2000 and all years 2003-10; percentage change between 2000 and 2010; county and state levels
Multi-family housing inventory—year end	Annual total in 2000 and all years 2003-10; percentage change between 2000 and 2010; county and state levels

Source: the authors; information derived from Washington Centre for Real Estate Research

4.6.5 King County and the City of Seattle

Since 1994, King County has been monitoring growth management efforts through its benchmarking program, which tracks progress towards meeting the goals outlined in its Countywide Planning Policies and Comprehensive Plan. Benchmark data was initially published in single, annual benchmarking reports. However, more recently, progress has been reported in 5 bi-monthly bulletins which cover the main areas of growth management policy identified as: Land Use (King County 2008b); Economics; Transport; Affordable Housing (King County 2009) and Environment. Progress is assessed using 45 'Benchmark Indicators', summarised in the table below with reference to indicators applicable to housing and land use planning (by growth management policy area).

Table 6: Growth management monitoring in King County, Washington—affordable housing indicators

Indicator	Objective / outcome	Key data and source
Supply and demand for affordable rental housing	Provide sufficient affordable housing for all King County residents	Median rent, by jurisdiction; median incomes; proportion of rental housing affordable at varying income levels; geographic distribution of affordable rental housing; number of renter households by household size.
Percentage of income paid for housing	Provide sufficient affordable housing for all King County residents	Percentage of households paying more than 30% of income for housing (all household, owners, renters, and by income category); number of households in different income categories spending more than 30% income on housing (all household, owners, renters).
Homelessness	Provide sufficient affordable housing for all King County residents	Estimated number of homeless people (sheltered and non-sheltered). Source: King County Department of Community and Human Services.
Home purchase affordability gap	Promote affordable home ownership	Difference between median house price and affordable house price (based on median income).

Indicator	Objective / outcome	Key data and source
	opportunities	Source: American Community Survey, King County Department of Assets.
Home ownership rate	Promote affordable home ownership opportunities	Percentage of households who own their home; proportion of home owners / renter per income group. Source: American Community Survey
Apartment vacancy rate	Provide sufficient affordable housing for all King County residents	Vacancy rate by subarea; vacancy rates, unemployment rates and average rents (whole county) 1995-2008.
Trend of housing costs in relation to income	Promote affordable home ownership opportunities	Annual percentage increase in median household income, median house price and median rent 2000-07. Source: American Community Survey, King County Department of Assessments, Central Puget Sound Real Estate Research Report
Public dollars spent on low income housing	Promote equitable distribution of affordable low-income housing	Local and federal funding for new and existing low income housing; percentage of home sales (by jurisdiction) that would be affordable to median and low income households; percentage of rental units (by jurisdiction) that would be affordable to median and low income households.
Existing housing units affordable to low income households	Promote equitable distribution of affordable low-income housing	Geographic distribution of home sales (total, single family homes and condominiums) affordable to median and low income households. Source: King County Department of Assessments, American Community Survey

Source: the authors; information derived from King County Benchmarking Reports

Table 7: Growth management monitoring in King County, Washington—land use indicators

Indicator	Objective / outcome	Key data and source
Percentage of new housing in urban areas, rural areas and urban centres	Limit growth in rural / resource areas; encourage a greater share of growth in urban areas and urban centres	Net new housing units permitted in urban centres 2001-06; net new housing units permitted in King County by sub areas.
Employment in urban areas, rural/ resource areas, urban centres and manufacturing/ industrial centres	Limit growth in rural / resource areas; encourage a greater share of growth in urban areas and urban centres	Percentage of total King County jobs provided in urban centres and manufacturing and industrial centres; percentage of jobs in urban centres (as proportion of total jobs); percentage of jobs in manufacturing and industrial centres (as proportion of total jobs). Source: Puget Sound Regional Council
Percentage of new residential units built through redevelopment	Make efficient use of urban land	Percentage of new housing units built through redevelopment of subarea 2000-06. Source: 2007 Annual Growth Report, Suburban Cities Association of King County
Ratio of land consumption of population growth	Make efficient use of urban land	Percentage of urban acres newly developed 1996-2000 and 2001-05; percentage growth in urban population 1996-2000 and 2001-05. Source: King County Buildable Lands

Indicator	Objective / outcome	Key data and source
		Report (2002 and 2007) 2007 Annual Growth Report
Trend in achieved density of residential development	Make efficient use of urban land	Lots per acre for single family homes, by jurisdiction 1996-2000 and 2001-05; unit permits per net acre, by jurisdiction 1996-2000 and 2001-05. Source: 2007 King County Buildable Lands Report
Comparison of remaining land capacity to household and job targets	Accommodate residential and job growth in urban areas	Housing capacity (based on residential land supply) versus growth target to 2022, by subarea; employment capacity (commercial and industrial land supply) versus growth target to 2022, by subarea. Source: 2007 King County Buildable Lands Report
Acres of urban parks and open space	Encourage liveable, diverse communities	Acres of parks and open space in King County 1998-2006; acres of parks and open space per thousand residents.
Ratio of jobs to housing in King and surrounding counties	Balance jobs and household growth	Number of jobs per housing unit 1995 2000 and 2006 (4 counties); number of jobs per housing unit 1995 2000 and 2006 (King County subareas). Source: Washington State Office of Financial Management and Employment Security Department, Puget Sound Regional Council
Acres in forest land	Maintain the quality and quantity of natural resource lands	Acres of forested land in various categories; proportion of County that is forested land. Source: King County Department of Natural Resources and Parks
Acres in farmland and number and average size of farms	Maintain the quality and quantity of natural resource lands	Distribution of King County farms by acreage 1997 and 2002. Source: U.S. Department of Agriculture

Source: the authors; information derived from King County Benchmarking Reports

Additionally, King County publishes Buildable Land Reports every five years (although data is collected annually), in accordance with the Growth Management Act which requires six Washington Counties and their cities to report periodically on their land supply. The most recent report (Suburban Cities Association of King County 2007) assesses residential and non-residential development between 2001 and 2005, including net housing growth (residential building permits) versus household growth targets; conversions and demolitions of multi-family and single family units and new build compared to household growth targets. A range of data on density is collected, including single family residential densities; average density per acre, by subarea 2001-05 densities compared to 1996-2000 data; average densities achieved by zoning density allowance (i.e. are maximum densities being achieved); and an analysis of GIS data to determine redevelopment opportunities. To maintain a pipeline of developable land, the report includes comparisons between total gross and net developable land by subarea and jurisdiction (in acres), by zoning (i.e. multi-family residential, single family residential, mixed use and total) and household growth targets. King County also publishes Annual Growth Reports, which include demographic information for King County, including population, age, ethnicity, language, income, poverty levels; and findings of the most recent Buildable Lands Report.

4.6.6 California State

The state of California's *Land Use Planning Information Network* (LUPIN) brings together a range of planning information, including: zoning and ordinances for all California jurisdictions; plans (including, for example, state, city, county, coastal management and habitat conservation plans); maps and spatial data (including, for example, GIS maps, earthquake maps and information, Indian reservation maps; photos and satellite imagery. While not a basis for performance measurement, the information network facilitates data sharing across the state and between local authorities (State of California 2005).

Like Washington State, all Californian local governments must prepare comprehensive, long-term local plans to govern the development of the jurisdiction. The plans contain seven 'elements', including housing. Since 1969 local authorities have been required to address the housing element by ensuring sufficient opportunities for housing development, subject to periodic review, in practice achieved through housing element annual progress reports. Data collected in the progress reports includes information on rates of housing construction, including tenure and affordability of new housing by household income; the allocation of regional housing targets; and the implementation of particular projects (Department of Housing and Community Development 2011).

Table 8: Datasets for housing element annual progress reports in California State

	Title of dataset	Key data
Table A	Annual Building Activity Report Summary—New Construction—Very Low, Low, and Mixed Income, Multi-Family Projects	Tenure of units; affordability by household income (i.e., low, moderate); total units per project; estimated number of infill units; housing with financial assistance or deed restrictions; housing without financial assistance or deed restriction.
Table A2	Annual Building Report Summary—Units Rehabilitated, Preserved and Acquired pursuant to GC Section 65583.1(c)(1)	Number of units affordable to extremely low, very low and low income households, permitted through the following activities: rehabilitation; preservation of at-risk units; acquisition of units.
Table A3	Annual Building Activity Report Summary for Above Moderate Income Units (not including those units reported in Table A)	Number of permitted units, affordable to moderate and above moderate income households, by the following characteristics: single family, 2-4 unit development, 5+ unit development, second unit, mobile homes, proportion of the above delivered through infill.
Table B	Regional Housing Needs Allocation Process	Number of units permitted by income category and whether deed restricted or non-deed restricted; total units to date (permitted in plan period); total units remaining, by income level i.e. to be delivered in plan period (this is the difference between the number of dwellings determined through the RHNA and the total delivered)
Table C	Program Implementation Status	List of programs, including program objective, timeframe and status of program implementation

Source: the authors; information derived from State of California Department of Housing and Community Development.

4.6.7 Massachusetts State

The Massachusetts State Data Centre is run through the University of Massachusetts Donahue Institute's Economic and Public Policy Research Unit. It produces quarterly

reports (the 'due diligence document') which include a range of data relating to the performance of the Massachusetts economy, including annual per capita government spending 2000-09, by type (e.g. education, parks, highways); residential building permits authorised annually; and existing home sales (seasonally adjusted 1981-2011) (Donahue Institute Economic Policy Research Unit 2011).

The State Data Centre also publishes additional data such as the 'Housing Units by Tenure and Vacancy Status' which lists, for the State, each county and every town and city in Massachusetts, the number of occupied housing units (owner and rented), vacant units (for sale, rent, seasonal occupation). The Centre also publishes a number of thematic maps including, for example, maps showing the location and proportion of families living below the poverty line and median income distribution across the State (University of Massachusetts 2005).

4.6.8 Boston Metropolitan Area Planning Council

The Metropolitan Area Planning Council (MAPC) is the regional planning agency for Metropolitan Boston. It hosts a free online data tool called the 'MetroBoston DataCommon' containing community profiles, the number of building permits issued for single family and multi-family homes 1981-2007; and housing sales data. It also hosts a 'Regional Map Gallery' showing housing unit growth 2000-09; mortgage denial rates for high income borrowers; housing production plans, showing jurisdictions which have greater than 10 per cent subsidised (low income) housing inventory and those that have an approved housing production plan to increase stock of low income housing; foreclosures and loan resets; areas of mixed use zoning; and the location and size of new housing—the median distance of new homes from Boston (1940s—1990s) and changing ratio of acres to units.

The regional maps also shows supply of affordable housing, using a colour gradient to indicate, in each metropolitan town, city or neighbourhood, the proportion of units for sale or rent affordable to households earning 80 per cent of median income for the metropolitan area (MAPC 2012).

4.7 Summary

This section of the report proposed a performance measurement framework for Australian planning, housing supply and affordability, with reference to the panel discussions as well as the wider emergent objectives for Australian planning systems articulated through burgeoning national urban policy. It also compared approaches to measuring housing supply and affordability outcomes and planning system performance across Australia, New Zealand, the US, and the UK, drawing on material developed by the international panel members as well as presentations and deliberation at the two panel discussions.

Panellists agreed that although contemporary performance cultures in government have begun to place great emphasis on monitoring and benchmarking performance of planning authorities, in the UK as in Australia at least, this seems to focus more on procedure and processing than on substantive spatial development outputs. There has been a greater interest in wider outcomes, such as housing affordability, and considerable data are available on affordability indicators across all of the jurisdictions reviewed here. However, academic panellists emphasised the difficulty of directly linking these outcomes to the actual policies, activities, and outputs of a local planning regime.

A holistic approach would triangulate multiple sources of information about the planning system—from readily measurable data on service performance (timeframes, decision volumes, appeals)—with information on policy orientation and regulatory

approach (plan goals and requirements), and data on the implementation of policy goals—for instance, spatial development patterns, transport and environmental quality indicators, and stakeholder views.

Finally, panel members emphasised the need to look very carefully at the full spectrum of relationships between planning, housing supply and affordability, with several panel members indicating that the international literature tended towards over simplification of these factors. In developing a research model for application in Australia, all agreed on the need to balance considerations about what is both important and valid as an indicator of planning performance or housing market outcomes, with what is actually able to be achieved based on the availability of data.

5 PLANNING SYSTEM PERFORMANCE AND HOUSING MARKET OUTCOMES IN ENGLAND AND AUSTRALIA: TESTING THE MEASURES

In this section of the report we bring the review of literature and the panel deliberations together to propose a typology of planning system and housing market measures and indicators. We then demonstrate their potential application to local planning authorities and sub-regional housing markets in England, where, as noted, a more substantial body of data exists than that currently available in the Australian context. This material draws on the wider advisory paper prepared by Professor Bramley to inform the investigative panel deliberations (Appendix 8). Using Professor Bramley's illustrative models, we seek to emulate the approach using available Australian data, focusing on the Sydney metropolitan region. While this work reveals many limitations in the Australian data on planning and the housing market at all scales, we are able to explore new performance measures of development assessment processes, such as approval rates and decision times. Finally, we construct a preliminary model for understanding and measuring relationships between the planning system and housing outcomes in Australia, contextualised in relation to the wider range of factors affecting housing supply and affordability.

5.1 A typology of measures of planning performance and housing outcomes

Our review of previous studies on planning performance and housing outcomes (Sections 2 & 3 of this report), and comparison of actual measurement approaches applying across Australia, New Zealand, the UK and the US (Section 4), can be conceptualised as a typology of measures. As shown in Table 9, these include: land supply, planning system policy orientation, regulatory constraint, service efficiency, and planning authority culture. Key indicators used in the literature and in our four comparator jurisdictions are shown to illustrate how a range of quantitative and qualitative data on the particular measure might be collected.

Table 9: Measuring planning performance and housing market outcomes

Planning Measure	Indicator	Reference
Residential land supply	Short term availability of serviced sites	(Bramley 1998, Bramley & Leishman 2005)
	Type of sites (i.e. Brownfield/ Greenfield / infill)	(Buxton & Taylor 2011)
	GIS data on particular land use zones / classifications	
	Size/ownership of land	
	Infrastructure provision	
	Long term supply pipeline	
Policy orientation	Introduction of specific new control	(Chamblee et al. 2009, Zhou et al. 2008)
	Strategic state / regional policy content	(Waldner 2008, Lewis 2005)
	Content of comprehensive local plans	(Ihlanfeldt 2009)
Regulatory constraint	Controls (survey database) / GIS data	(Lewis 2000, Pendall 2006, Gyourko et al. 2008)

	Urban Growth Boundary / Land supply policy	(Cunningham 2007, Kahn et al. 2010, Landis 2006)
	Developer contribution requirements (including inclusionary zoning)	(Mathur et al. 2004a, Burge et al. 2007), (Schuetz, Meltzer et al. 2011)
Service efficiency	Approval / refusal rates	(Hui & Ho 2003)
	Decision times	(Ball 2010)
	Appeals	(Hui & Ho 2003)
Planning authority culture	Developer perceptions of local administrators	(Monk & Whitehead 1999)
	Type of decision (code, merit, political)	(Kahn 2011, Levine 1999)
Outcomes	Land values	(Shilling et al. 1991)
	House prices	(Bramley 1993, Dawkins & Nelson 2002, Glaeser et al. 2005)
	Rates of new housing construction (permissions, completions, net additions)	(Bramley 1998, Lewis 2005)
	Spillover effects (price / supply)	(Byun et al. 2005, Monk & Whitehead 1999)
	New housing composition (density, diversity)	(White & Allmendinger 2003)
	Affordable housing supply	(Gurran & Whitehead 2011)

Source: the authors

- The quantity and flow of 'residential land supply' (short and long term) is shown in the table as an important pre-condition for housing development; as both a planning measure and a real indicator of geographic context and constraint.
- 'Policy orientation' refers to the content of planning instruments in relation to strategic goals (either normative goals or mandates established by higher levels of government). Focusing on the policy orientation of plans provides a basis for determining the extent to which these objectives are realised, not only within planning instruments (plan 'conformance') but also through subsequent implementation (plan 'performance') when paired with other data sets.

Measures of regulatory constraint focus on the quantity and nature of planning controls. They provide a particular basis for examining potential outcomes arising from regulations designed to restrict development in certain areas, environmental controls, density or design standards, or fee obligations.

Service efficiency measures focus on the performance of planning functions and provide a basis for diagnosing potential planning system blockages (such as unpredictable decision outcomes, potentially indicated by high refusal rates) or sluggish timeframes. As noted, these measures are often used as proxies for overall planning system performance, but are a limited source of data subject to multiple interpretations.

'Planning authority culture' provides a measure of attributes not readily quantified in an analysis of planning regulations or service efficiency data. Rather, this measure relates to the ways in which planning rules are interpreted by local authority staff, overall attitudes towards housing and urban development, the ways in which

decisions are made (e.g. via codes and standards, a merit assessment, by professional staff under delegated authority, by elected officials or by political ballot etc.) (Nguyen 2007) and the nature of relationships between planners and developers or other stakeholders. These factors can have a significant impact on developer behaviour (Monk & Whitehead 1999).

In terms of outcome measures, investigative panel members emphasised the need to recast the residential land supply pipeline as a system input or constraint rather than an outcome, given the lag time and uncertainties between land assembly, preparation, and the completion and occupation of a housing unit. Rather, panellists were of the view that the quantity, price, and composition of new dwellings are more important indicators of housing market performance particularly in the Australian context. However, it was agreed that unresponsive local planning systems could have 'spill over' effects to other housing markets and that this may be a relevant outcome indicator as demonstrated in previous research (Monk & Whitehead 1999, Byun et al. 2005).

Bringing these factors together, it is important to recognise mediating conditions that might influence the ways in which the planning system intersects with the housing market in a given place and time. These include overarching housing market conditions and fluctuations, with planning regulations likely to have differential impacts in rising and declining markets (Titus et al. 2009), and in high and low value settings; the degree of segmentation in local and regional housing markets, with high substitutability of housing a countervailing effect of tight regulation; and, the proportion of housing supply within a local and regional housing market that is new construction.

Several studies have also pointed to the potential for positive housing market outcomes to arise from specific forms of intervention, such as the effective use of impact fees to ensure local infrastructure provision (Mathur et al. 2004b), or the promulgation of clear controls to promote certainty and investor confidence (White & Allmendinger 2003). This was reinforced by industry panellists who emphasised the difficulties associated with unstable systems for infrastructure charging and provision; and the potential to unlock new development opportunity if infrastructure problems could be resolved.

5.2 Planning performance and housing market outcomes in England: A demonstration model

To inform the investigative panel deliberations, Professor Bramley prepared an advisory note as well as a series of demonstration models to illustrate potential approaches to measuring planning performance and predicting sub regional housing market outcomes, drawing on previous work undertaken for the (former) National Housing and Planning Advice Unit (NHPAU), and more recently for a group of local authorities in Gloucestershire. The full paper is contained in Appendix 8.

5.2.1 Key measures

Professor Bramley makes a central distinction between two key measures: the 'planning stance' of a local authority and the amount of land available within a local area. Planning stance refers to the policy orientation of the authority, its propensity to support development in a positive way where possible, or the reverse, its propensity to resist development where it can. The actual land available reflects the interaction between planning stance and the objective situation in terms of physical and environmental constraints governing the potential amount of land which might be made available. It also reflects the stage in the planning cycle—for instance, whether a Local Development Framework has been recently updated—and the possible

imposition of top-down targets such as (the former) RSS which may to some extent have overridden local preferences. It also reflects the past and present state of demand. Where demand has been slack, a pool of available land may have built up.

Other indicators used in the model are summarised in Table 5.2 below, and shown in full in Appendix 8. Of these, considerations of particular interest to the panel deliberations included:

- The need for composite indicators of land supply (in Professor Bramley's work this has included using regional targets as well as the actual amount of available land (permissions plus allocations/commitments) for a single point in time.
- The need to identify geographic constraints (such as Green Belt land, regarded as a relatively hard constraint in the British system), and for more sophisticated measures of potential land availability, taking account of overlaying land use categories, characteristics and designations, location in terms of existing built up areas, and physical features like altitude and slope.
- The share of small sites in the overall land supply (which was hypothesised to be a negative factor in terms of supply potential, borne out by the results of modelling of new build and planning permissions flow); the share of new housing built on.
- The need to collect data on the actual number of housing units completed, as the basic outcome of the system in terms of new housing supply (including private and social completions).

Previously developed land (PDL, or brownfield land as it is often known) is an indicator which received increasing emphasis in England in the late 1990s and early 2000s. Targets were set for this indicator, nationally and regionally, and achievement was measured. The overwhelming focus has been upon the percentage of new housing units on formerly urban land, although density has also been calculated from this

The composite indicator described as 'planning stance' is of particular interest. The proportion of planning applications for housing approved has been used as a measure of planning stance (Hilber & Vermeulen 2009; Cheshire & Sheppard 2004; Cheshire & Sheppard 2005). However, as noted above, this indicator is partially endogenous, tending to be influenced by situations of high demand or lack of up-to-date approved plans, when more non-conforming sites are put forward. Also, the indicator is lumpy in annual data. A partial response to this situation is to take the approval rate value averaged over a longer period. However, as we go on to report, even when taking the longer term average this indicator does not perform very well in predicting new permissions flow or new build rates.

Similarly, the decision time on planning applications is a favourite measure for those focussed on process efficiency, and some analysts (e.g. Ball 2010) regard this as a significant indicator of planning stance as well as a cause of cost to the industry and supply inelasticity. While there is a priori logic in these arguments, as discussed in Section 2 of this report, Professor Bramley's work suggests that this indicator has not been a good predictor of the key outputs we are most interested in, as detailed below.

Table 10: Summary of data inputs for Indicators of housing land supply and planning stance at local authority district level, UK

Item	Definition
Completions	Number x Year x LAD by private vs. social tenure
Planning permissions flow	New planning permissions granted for housing, units x LAD, as % of households
Planning permissions stock	Outstanding uncompleted permissions units x LAD, as % of households
RSS Housing Target	Annual number of net additions to dwelling stock 2006-26, LAD level
Five year land supply % of RSS target	Capacity of developable sites with permission or committed, phased over 1 st 5 years, divided by RSS target x 5.
Land available % of households	100x Product of previous two items divided by households
Green Belt % of land Area	Approved Green Belt boundaries, area calculated by GIS, divided by total area of LAD
Small sites share %	Estimated % of units with planning permission on small sites (<10), LAD level
Average % of planning applications for major housing approved	Average over whole period to 2007, LAD level
% of applications approved last 4 years	Lagged moving average version of above measure
Average decision time major housing applications	Time in weeks from application to approval
Previously developed land share %	% of housing units built on PDL (brownfield) land, moving average
Net Density	Dwellings per hectare of land in residential use, ward level
Sparsity	Hectares per person, LAD level
Greenspace	% of land area 'greenspace'

Source: see Appendix 7, Table A.1 (Bramley 2011)

5.2.2 Testing the measures

Given the basic character of the UK planning system, with its discretionary development control system, and the view put forward in Section 2 about the most useful quantitative measures, perhaps the best single test of these measures, individually or in combination, is how well they predict the actual flow of new planning permissions for housing. This was attempted for this study by revisiting the modelling of relationships between these measures using data for all of the above as compiled at district level for the period around 2007. Some key regression models emerging from this are reported below, from which an index of planning stance might be compared across different types of area. Using this kind of model it may be possible to model future supply under various assumptions about changes in the planning regime and other key drivers. This is explored further in the full paper contained in Appendix 8.

To evaluate the potential statistical significance of various measures as indicators of 'planning stance' which in turn may predict various housing supply outcomes, a

regression model was developed (Table A.2). This modelling indicates that the strongest and most significant housing supply effects are associated with outstanding planning permissions (incomplete development) and the overall land availability. The hypothesis of a negative association with small sites is confirmed. The hypothesis of a positive relationship with social completions is supported but on the margins of statistical significance. The average success rate of planning applications (over time) is found to also be positive but, again, on the margins of statistical significance. Variables discarded through this process included average decision times and the proportion of previously developed land.

A more fully specified planning permissions flow model can be derived by including a weighted planning stance composite alongside the actual regional strategy target (capturing the top down influences in play in 2007); political 'pro development' sentiment derived from social attitude surveys and local authority voting patterns, as well as the other variables described. This approach confirms that the planning stance composite has a strong effect, as expected, but also that the RSS target (for local housing delivery) and local authority development sentiment also have significant effects.

These measures were then applied across England, by broad regions and types of locality (categorised in relation to rural and urban contexts), to compare the impact of variations in planning stance, and regional housing targets on the flow of planning permissions (Table A3). In two of the three northern regions and in the West Midlands regional housing targets were relatively low (reflecting lower demographic and economic growth). In these cases actual and predicted permissions flows are greater than the regional housing numbers, and it can be seen that planning stances are more positive than average in the northern areas (although not in the West Midlands). Regional targets were relatively higher in regions with more space which have tended to have higher demographic growth, including the South West, East, East Midlands and Yorkshire/Humber, and also in London, (where regional targets were more of a policy aspiration than something likely to be achieved). In these cases, actual and predicted permission flows are also above average, except in London. This partly reflects objective potential land availability, and partly planning stances, although planning stances in these areas are not as positive as the actual flows would suggest. In the South East, which is arguably the most pressured region and should be providing more housing, all indicators are below average. Here planning stances are relatively negative and constraints on land supply are perceived as strong.

On the urban-rural spectrum, regional housing targets were somewhat above average in the more rural areas, and actual and predicted flows were higher, especially in the most rural areas which have both more potential land and more positive planning stances. There were also significant variations between types of locality. Major cities and service centres had below average RSS targets but above average actual and predicted flows and planning stances. Coastal and countryside areas had slightly above average targets and actual and predicted flows, but somewhat negative planning stances. London suburbs had quite restrictive planning stances and relatively low flows, despite above average targets. Mining and manufacturing areas had low regional housing targets, reflecting low economic and demographic growth, but were close to average in actual and predicted flows. Prospering UK areas had above average targets but tighter planning stances and below average performance in terms of actual or predicted flows.

This account provides some insights into the way in which planning stances interact with objective constraints and land availability and with economic conditions to

produce outcomes which deviate significantly from the pattern produced by the ‘top down’ regional planning process.

5.2.3 Assessing England’s planning system performance

Moving to an assessment of the performance of the planning and housing supply system in England, in the light of the analysis embodied in the Barker (2004) review of housing supply, Professor Bramley highlighted five key outcome measures as particularly important:

- The actual rate of new house building, relative to the size of region in terms of number of households.
- The rate of increase in housing stock relative to the household growth projected in conventional trend-based household projections.
- Market affordability measured by house price to income ratios or by proportions of younger households able to afford to buy (taking account of interest rates).
- Measures of the need for affordable housing relative to the prospective supply of such housing.
- Indicators of growth in housing supply relative to growth in the economy, in terms of GDP (GVA) or employment.

In the advisory paper, these measures were constructed to provide a retrospective assessment of the recent performance of the system, as an illustrative mock-up using readily available data (Table A4). The assessment was done for the English regions, based on the dataset assembled for the base period of the Gloucestershire sub-regional model.

The first indicator, new build rate, showed rather less variation between regions than might be expected. Higher supply tends to be in regions which combine relative prosperity with more space and potential land availability (e.g. East Midlands and East of England regions, versus London and the North West). The second indicator compares stock increase with projected household growth. This is vulnerable to deficiencies in the trend-based household projections. For example, West Midlands has a surprisingly high score, but this may reflect a relatively depressed household growth projection in this period. A relatively favourable score for the South East reflects household growth which has been suppressed by housing scarcity. Affordability was relatively poor across England in 2007, having deteriorated a lot since 2001. The deterioration appears less in absolute percentage point terms in London and South East, but this is from a lower base position.

The net need for affordable housing takes account of a proportion of backlog needs, new household formation times the unaffordability rate for market renting, and the supply of social sector re-lets. This shows a sharp difference between the southern regions with high net needs and northern regions with overall surpluses at regional level. In 2007 new social rented completions were still relatively low, even in the most pressured regions, although they have subsequently increased significantly.

The last two indicators attempt to compare housing stock increases with economic growth measures. The first compares numerical stock increase with job growth. The figure for South East appears anomalous, because of very low job growth in this particular period (possibly job growth was suppressed by housing shortage). The second measure compares a mix-adjusted stock increase with real GVA growth. This shows more favourable performance in Yorkshire and Humber and West Midlands, and less favourable performance in North West and London. While such comparisons should be useful, the measures may need refining in terms of time periods or scaling.

5.2.4 Estimating the impact of planning on key outcomes

This aspect of the process of planning system performance assessment might be regarded as the most analytically challenging. The challenge lies in developing realistic, robust models which can quantify the relationships between planning inputs and housing market outcomes and solve the two problems of:

- attributing effects on outcomes to planning versus other causes (e.g. economic and demographic factors), and
- forecasting future outcomes conditional on assumed policies and background conditions.

One approach developed to meet this challenge is the sub-regional economic model developed for Gloucestershire, building on an earlier feasibility study for the National Housing and Planning Advice Unit (NHPAU). Without providing a detailed account of this model, some illustrative insights into what it does and how the impacts of planning changes can be tracked are shown in Appendix 8 (Figure 5). This diagram provides an outline schematic picture of the model which can be viewed as having four broad streams (vertical segments in the diagram), concerned with the labour market, population/household demographics, the housing market (prices, rents), and new housing supply. Exogenous inputs are shown around the outside of the diagram; these are either assumed future values and trends or policy controlled inputs. The key outcomes forecast focus on affordability and housing need but along the way the model predicts new build rates, house prices and rents, migration, household formation and growth, and several labour market indicators which feed into incomes.

The main features of the results of this model (shown in Appendix Table A.5) are:

- the impact of planning consents on supply is considerably less than 'one for one';
- additional supply has some effect in steering net migration to the area and in increasing household formation, and
- additional supply would have a moderate effect on house prices and affordability, but this would take quite a long time to be felt; (d) this would also impact favourably on aspects of housing need including through increasing the supply of social sector lettings.

5.2.5 The impact of planning obligations (section 106) on outputs and outcomes

Finally, it has been argued that part of the regulatory impact or burden of planning is increasingly related to the obligations which are placed on developers, through section 106 agreements (made through the process of planning approval) or the broader Community Infrastructure Levy (CIL) (a flat levy for infrastructure contributions). The most common and onerous type of section 106 obligation in recent years in England has been for the provision of affordable housing, under England's version of inclusionary housing approaches within planning which are being developed in many countries (Mallach & Calviati 2011; Monk 2011; Gurran et al. 2009).

The general presumption in England is that the burden of planning obligations, including s106 affordable housing requirements, falls primarily on the landowner rather than the developer or the consumer of new housing. Planning obligations are a hypothecated quasi-tax on development values; these are seen as a tax on economic rent and therefore not, in the generality of cases, likely to impact much on supply. This of course assumes that residual land values (without section 106) would be large positive values, particularly in areas where these obligations are strongly required

(e.g. south of England). Circumstances where this logic breaks down include places and time periods when market prices for housing are moderate and residual land values are not very high or even negative; or some previously developed land where there are existing use rights with significant positive value and where alternative use developments would not be subject to the same obligations.

Additional contrary arguments or cases where section 106 obligations could impact negatively on supply include transitional periods when such a regime is introduced, where developers may already have bought land at higher values assuming no obligations. In addition, it can be argued that the negotiation process around s106 is simply slowing the processing of applications significantly. And some developers would still take the view that having affordable (especially social) housing on their sites would reduce sales values and the ease of selling market units.

It is quite difficult to test the impact of these obligations on supply and prices within econometric models, without having access to comprehensive and consistent data on the extent of planning obligations and their financial characteristics¹. There are data on s106 numbers for a few recent years from local authorities (and similar data for Scotland), but these data alone do not fully specify the financial burden. For example, most s106 sites until recently also attracted Social Housing Grant, so that the amount of subsidy being extracted from the land value was actually quite modest (Whitehead 2007).

A cruder approach to this issue is simply to look at the impact of new social housing output on the rate of new private house building completions in the context of econometric models for supply, as for example in the Gloucestershire model (see Tables A1, A5). In all such tests undertaken on recent English data, the social housing completions variable has a significant positive impact on the rate of new private house building. This is clearly at variance with the assumption of many critics of s106 that it is bound to slow down and reduce private housing supply.

This finding can be interpreted in the following way. First, as implied in the tables above, a willingness to build social housing is likely indicative of a positive planning stance towards new housing provision generally. Second, although s.106 has not become the universal route to social housing provision, it has become very widespread and in some years a majority route to social provision. With such policies in place there is a general presumption that to get some private housing built you also have to build some social housing (or provide land or cash contribution towards it). Third, in areas where s106 is heavily used, land values tend to be very high, so the basic economic logic suggests that there should not be a big negative effect on supply. Fourth, in this period section 106 was very often combined with injections of social housing grant, so one could argue that the social housing was often cross-subsidising the private output rather than the other way around.

Given the increasing connection between private and social housing development, it could be argued that this evidence is not a definitive test of the proposition that s.106 does or does not hamper private housing supply, even though the other reasons would imply that there is no hampering. One might still want to argue that the existence of s106 as a regime may hamper supply, against a counterfactual of a regime where no s106 operated. Certainly one can still argue that s106 should be applied in a smart way, with clarity of expectations, viability testing, reasonable requirements, and rapid administrative processing.

¹ The University of Sheffield may have such data, by combining HCA program information on grant with s.106 planning numbers; but probably only for a small number of recent years.

5.2.6 Developing further measures in the English context and potential implications and lessons for Australia

In the English context there is scope for developing further measures of planning stance and constraints, and of physical and environmental constraints on the potential availability of land for housing development. Some of these might have analogues for Australia. These include information about the status of Local Development Frameworks (the direction and magnitude of the policy embodied in the plan, for instance, the housing target number (or 'trajectory') expressed as an annual number). Similarly, in situations where there is no up-to-date local framework agreed, this may mean less dwellings built because there are less allocated sites to draw on and because local authorities may be reluctant to determine major applications in a way which would pre-empt the planning process. On the other hand, with the new 'Presumption' in favour of development, this policy vacuum may mean lots of speculative new applications, some of which will get through. In the Australian context, the age and status of local planning instruments may provide an indication of potential for straightforward, 'certain' development in comparison to more speculative development proposals.

In terms of spatial data, a challenge is to distinguish between drivers and outcomes. The ability to highlight land with a greater likelihood of being deemed suitable for development would undoubtedly be enhanced by overlaying other designations or characteristics variables. Obvious examples included restrictive environmental designations. Slope and altitude of land are widely recognised as potential constraints on house building, similarly, another aspect of suitability which has received a great deal of extra attention in the last five years is flood risk, following a series of costly flood events in England and growing awareness of potential climate change impacts.

Another approach to assessing suitability for housing is to take account of location and accessibility/connectivity to existing urban areas and service/employment centres. One could posit thresholds and create buffer zones based on these existing features using the existing transport network, and overlay these on the other layers discussed above. Or one could posit a continuous decreasing function of distance/time, so that the weighted likelihood function was continuously decreasing as you move further away. These approaches tend to embody the conventional normative assumptions of the urban sustainability movement. A more market based approach would be to base it on a hedonic house price model. In general, hedonic models tend nowadays to display a relatively shallow distance decay, which in some city regions appears to be positive.

The 'proof of the pudding' with all of these hypothesised features of land or location which affect its 'potential' use for housing development is whether systematic relationships can be found across large sets of data between certain features and greater or lesser propensity for housing to be built. In principle, having created a set of measures as sketched out above, one could then attempt to calibrate a composite 'suitability/probability' function by the time-honoured fashion of running a regression. The dependent variable could be either parcels of land developed for housing in a micro approach, or numbers of housing units built and sold, or let for small geographical area units.

5.3 A preliminary framework for Australia

Our approach to developing a potential framework for measuring planning performance and housing market outcomes in Australia was twofold. Firstly, we investigated how difficult it would be to replicate Professor Bramley's approaches to constructing indicators of land supply, housing demand, and planning system

performance relevant to housing, using the Sydney metropolitan area as a test region. We then developed a conceptual model for analysing the role of planning in relation to the wider factors influencing the housing market.

5.3.1 Indicators of land supply, housing demand, and planning system performance

Focusing on a single geographic region comprised of multiple local planning authorities appeared to be a promising basis for comparison with Professor Bramley's work. As well as the full spectrum of available national level data collected by the ABS, more targeted housing market data on prices, rents, and affordability trends is maintained by Housing NSW, while the NSW Department of Planning and Infrastructure has reported on a relatively detailed set of performance data relating to development assessment (albeit dating only from 2006–07).

It soon became apparent that replicating Professor Bramley's models would be challenging using currently available data sources. It is worth exploring these data limitations in some detail, to inform future research effort.

In relation to land supply, Professor Bramley's models depended on strong indicators of expected land/site availability and development context, including regional housing targets, density measures, and the share of previously developed land. However, as shown in Table 5.6, there are no easy Australian equivalents to many of these measures, although we propose some potential approaches to estimating density, residential development type, and the highly aspirational sub regional housing targets specified by the NSW State government.

Table 11: Potential indicators of land supply and development context, England / Australia comparison

Indicator (England)	Potential NSW equivalent
Regional Spatial Strategy (RSS) housing targets	Sub regional housing targets contained in sub regional strategies for the Sydney Metropolitan region, but these targets are aspirational and non-binding Metropolitan Development Program data on release sites (Greenfield land), but ad hoc
Previously developed land share %	No direct equivalent, but could derive alternative estimate of development context by:
(% of housing units built on PDL (brownfield) land, moving average)	*proportion of new development that is multi-unit (development trends) *proportion of existing housing stock that is attached/detached
Net Density Dwellings per hectare of land in residential use, ward level	N/A
Sparsity Hectares per person, LAD level	Available for LGA level via ABS National Regional Profiles

Source: the authors

Similarly, in relation to indicators of housing demand, Professor Bramley's model constructs several potential indicators, including rates of household growth and formation as well as population age, labour market statistics, and commuting patterns. As Australian data on number of households by Local Government Area (LGA) is only

available for 2006 (census year), the number of households in other years would need to be estimated.

With reference to commuting patterns, another indicator of housing demand used in Professor Bramley's models; the ABS State and Regional Indicators dataset provides information (under transport category) on the number people who usually work in each LGA as well as the number of people that usually reside and work in the LGA (from 2006 census). From those figures, the number of people who commute into the LGA to work can be calculated as a measure of possible housing demand i.e. inward commuters might choose to live in their LGA of work if housing was available / affordable. Large numbers of inward commuters could also indicate a job/housing mismatch. The number of people who commute out of their LGA of residence for work might also be calculated using 2006 census data.

Table 12: Potential indicators of housing demand, England / Australia comparison

Indicator (England)	Potential NSW equivalent
Household Growth (annual)	Estimate of net additional households during inter-census years (ABS National Regional Profiles)
Household headship Aged 25-59	Population aged 25-59 (ABS National Regional Profiles)
Unemployment	Unemployment rate (ABS National Regional Profiles)
Commuting (outwards)	People who work but do not reside in LGA i.e. commute inwards and people who reside, but do not work in the LGA i.e. commute outwards. NSW Bureau of Transport Statistics

Source: the authors

In relation to indicators of planning stance and performance, further problems with the NSW data emerge (Table 5.8). The first series of indicators examine the rate of new residential construction relative to household growth. There is no easy Australian equivalent to these indicators. Occupation certificates might offer the best proxy for measuring residential construction rates, however, in NSW occupation certificates are not yet reported by development type. One approach may be to assume that the number of residential occupation certificates, as a proportion of total occupation certificates would be equivalent to the proportion of residential applications in the total dataset on development applications; but this would require testing to determine validity. Further, while residential occupation certificates can be used as a proxy for completions, it should be noted that they are indicative of gross rather than net new dwellings.

Another issue is associated with constructing a measure of residential housing supply in relation to household growth (i.e. demand). As LGA-level data on number of households is only available for census years, household growth would need to be estimated.

Affordability indicators are also problematic. While Professor Bramley's approach is sensitive to household stage, comparable data is not readily available in Australia, with the closest approximation likely being median house price to median household income.

In relation to the flow of planning permissions, there is no straightforward source of data. Using different sources of information, ABS reports the total number of dwellings approved, which may be a better indicator of prospective supply than the number of development applications approved (as is reported by the NSW Department of Planning and Infrastructure), as approvals for multi-unit projects, as well as single dwellings, are counted as a single approvals in the later dataset. The only distinction made is between approvals for multi-unit projects of more or less than 20 units, making it impossible to estimate how many dwellings are being approved annually.

Table 13: Potential indicators of planning performance, England / Australia comparison

Indicator (England)	Potential NSW equivalent
New build rate (relative to the size of the region in number of households) / Rate of increase in housing stock relative to the household growth projected in conventional trend-based household projections	Estimated average number of occupation certificates issued annually 2007-10, compared to size of region in 2010 Sources: *NSW Performance Monitoring Data 2007/08—2009/10 (occupation certificates) *ABS National Regional Profiles (population and households)
Ability to buy / market affordability, measured as house price to income ratio or by proportion of younger households able to afford to buy (taking account of interest rates)	Ratio of median house price (strata-titled) to median household income Change in median strata-titled house price to income ratio 2005-09 Sources:
Ability to buy (ratio of median house price to income) over 5 years	*Housing NSW Rent and Sales Report (median price—strata-titled dwellings) *ABS 2006 (Median household income); ABS National Regional Profiles (Individual incomes)
Provision of Affordable Housing	NSW Rent and Sales Report and ABS Census
Net Need for Affordable Housing (relative to prospective supply)	
Housing Supply / job growth	None available at LGA scale, would need to be estimated
Planning Permission Flow	Annual number of Building approvals (dwellings) (ABS);
Approval rate	Estimate of annual number of residential approvals (NSW Monitoring Data)
Recent approval rate	ABS National Regional profiles NSW Performance Monitoring Data
Average decision time major housing applications (Time in weeks from application to approval)	Decision times as a proportion of statutory timeframe for development applications (40 days) NSW Performance Monitoring Data

Source: the authors

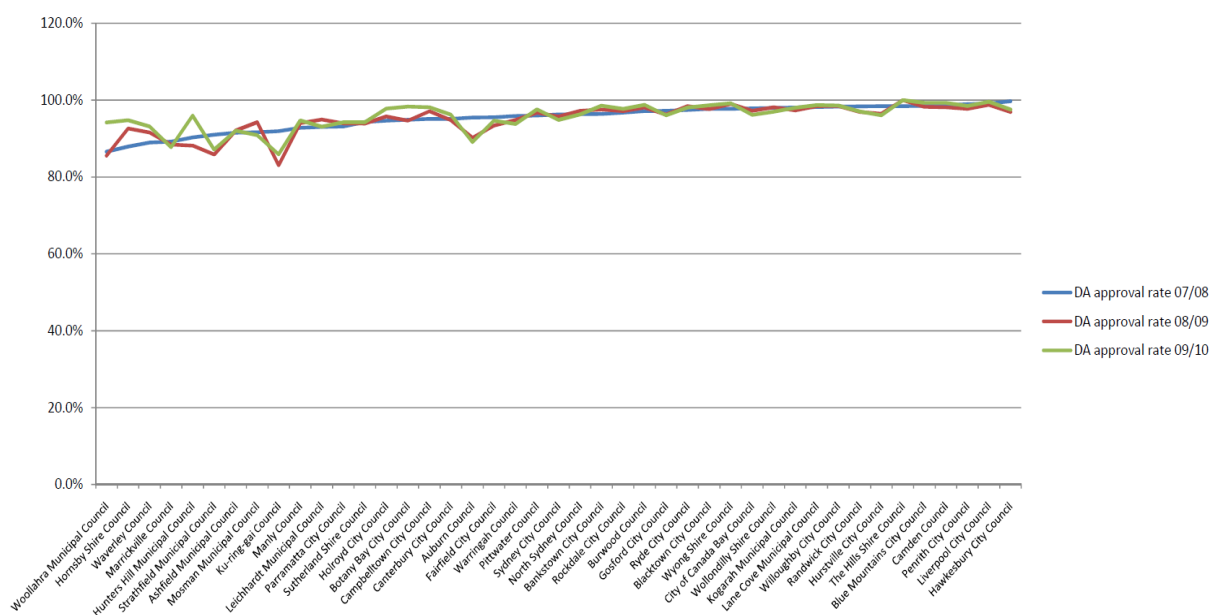
In relation to the approval rating measure (treated with caution by Professor Bramley), we were limited by the available data to a 'recent' approval rate for the three years in which data is available (2007/08 to 2009/10) (NSW DoP 2008, 2010, 2011). A further difficulty is to isolate dwelling approvals within the overall reportage. NSW

performance monitoring data tends to focus on the number of determinations, rather than approvals or refusals.

To estimate approval rates, we calculated an overall development application (DA) approval rate using data provided (which includes total DAs determined and total DAs approved). However, for specific application types (including single dwellings, and multi-unit projects), only the total number of applications determined is reported. Therefore we estimated the annual number of residential DAs approved by adding up the number of residential DAs determined and multiplying the total by the DA approval rate (previously calculated). This approach assumes that DAs of varying types are equally successful or unsuccessful, which may hold true in some jurisdictions, but not necessarily in all. The implementation of reforms designed to streamline housing approvals in NSW via a two track 'complying development' or merit assessment process meant that it was necessary to add the estimated number of residential complying development approvals to the determined total (annual) residential approvals (adjusting for minor differences in the complying development datasets for different years).

These estimations are illustrated in Figure 1 focusing solely on the Sydney metropolitan region. While they should be interpreted in light of the qualifications outlined above, they indicate two interesting trends in NSW planning performance. Firstly, while there is a widely reported perception that planning approvals in NSW are highly uncertain (e.g. NSW Parliament 2009), in practice, the vast majority of development applications are approved. Secondly, reforms intended to simplify the NSW planning system have been rolled out since the beginning of the reporting period for instance, the passage of standardised local plan making in 2006 and gradual adoption of standard instruments since that time. Such changes might be expected to influence the approval rating over time. However, approval rates appear to be relatively constant, with no clear pattern between localities or periods of time, aside from a slight tendency towards higher refusals in some existing built up and higher median house value areas. This may provide a weak indicator of planning stance, or, as proposed by Professor Bramley, more non-complying proposals motivated by buoyant demand within a constrained development context.

Figure 1: Recent planning approval rate, Sydney Metropolitan Region 2007/08-2009/10



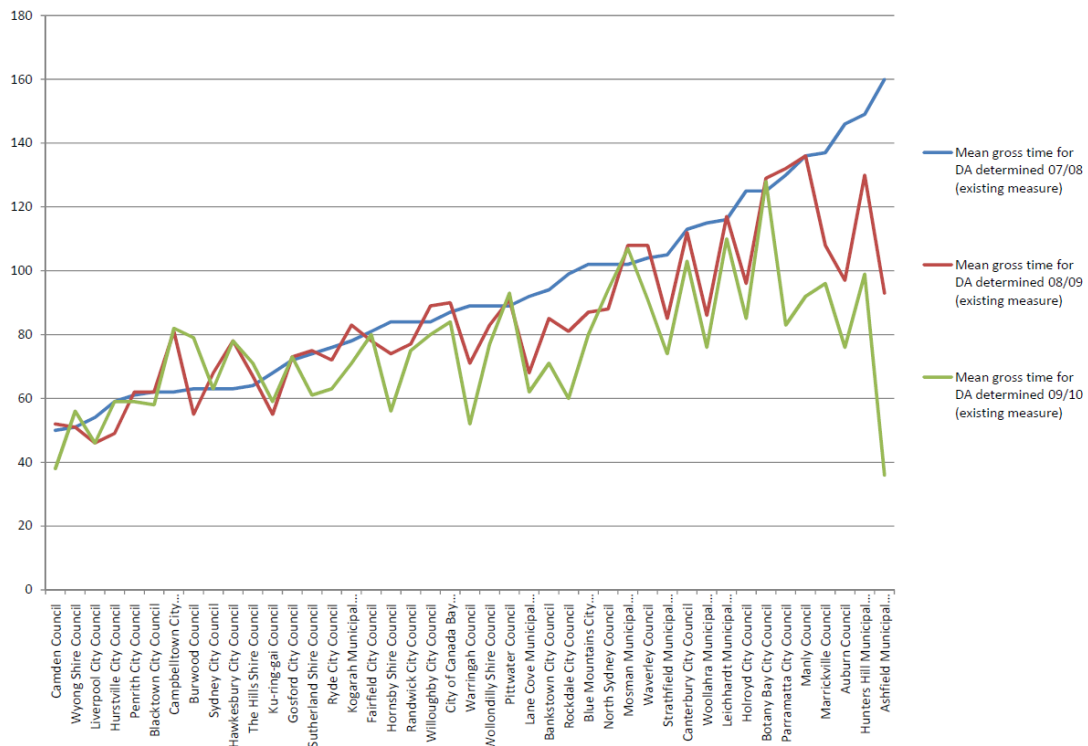
Source: Department of Planning 2008; 2010; 2011

A further point of interest is that although the number of complying development certificates for residential dwellings has grown dramatically over the reporting period (from a base of zero), this has not appreciably affected the overall development approval rate as shown above.

It is also worth noting that in comparison to Professor Bramley’s work in the UK, in Australia the development approval rate appears relatively stable, at a highly predictable 85-100 per cent, even in the highest value, most constrained sub housing markets in the country. This illustrates the importance of context in understanding planning performance and potential relationships to housing outcomes. Under the highly discretionary merit based planning system of the UK, a fluctuating approval rate would be expected. However, under Australia’s substantially codified system, there is clearly greater predictability once a land use plan is in place. However, both countries have experienced housing supply blockages of comparable magnitude in the past decade, implying that the importance of unpredictability as an explanation for reduced housing output may have been overstated.

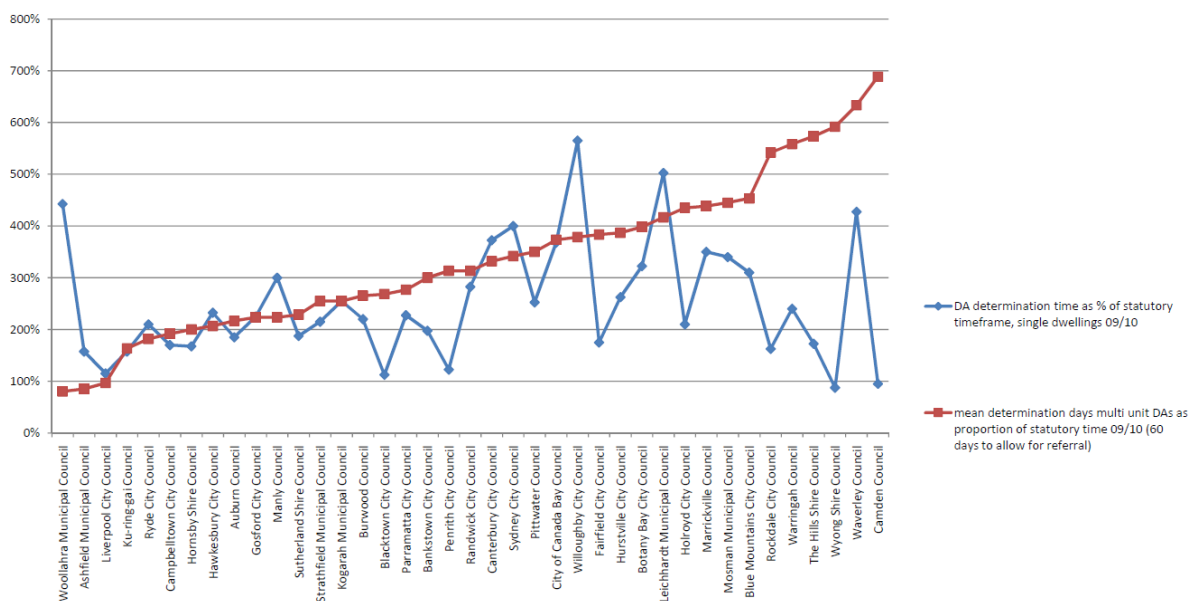
In relation to development approval timeframes, a preliminary analysis demonstrates a marked decrease in development approval times in many local government areas over the reporting period, with the largest improvements made by the slowest performing local areas. However, this may also reflect more careful ‘gaming’ of the ‘stop the clock’ provisions (enabling authorities to allow for referral and information requests), since the introduction of mandatory reporting.

Figure 2: Decision times as a proportion of statutory timeframe for development applications, Sydney Metropolitan Region



Source: Department of Planning 2008; 2010; 2011

Figure 3: Comparison between approval times as a proportion of statutory determination times, single and multi-unit dwellings



Source: Department of Planning 2011

Further observations might be made through a simple comparison of single and multi-unit dwelling approval times, albeit for a single year (Figure 3). The data (adjusted to reflect different statutory decision timeframes for each development type) shows how context and development type may influence assessment times and implied performance. A clear message from this figure is that the statutory timeframe for multi-unit proposals appears to be unreasonable given that so few councils can meet the required processing time.

The raw times for DAs are often used in a political context. For example in announcing the data for 2010–11 the Planning Minister stated that development application processing times worsened during the final year of former Labour government—highlighting the need for a complete re-write of the State's planning system.

However, as the linear regression analysis of NSW LGAs described in Table 14 shows² the processing times are impacted by mean household income (processing times increase in wealthier LGAs), the number of LGAs processed (the greater the volume the slower the times) and the number of DAs determined by staff rather than by Councillors (staff processing reduces processing times). This would suggest that DA processing times could vary from year based on the relative location of development, but these would not necessarily be making any comment on the relative performance of the NSW planning system. For example, if there was a larger proportion of multi dwelling DAs in wealthier areas where the matter was required to go to a full council meeting in one year compared to others, the processing times would increase. This change could not be attributed to a change in the performance of the planning system per se.

² This linear regression is intended as a simple analysis to show how a variety of factors can impinge on DA processing times. Other factors are likely to influence processing times which were not included in the analysis such as environmental vulnerability. The results of the analysis were supported by comments made at both of the panels.

Table 14: Simple linear regression. mean gross times for DAs 2009–10

Model		Unstandardised coefficients		Standardised coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	33.191	6.969		4.763	.000
	Pop Density 2009 (people per km ²)	.002	.002	.134	1.342	.182
	Median Annual Household Income (2009)	.000	.000	.206	2.173	.031
	Number of EFT staff allocated to development assessment 09/10	.525	.560	.141	.937	.350
	Number of DA approved 09/10	.211	.094	3.792	2.245	.026
	Number of DA determined by council staff 09/10	-.205	.094	-3.747	-2.194	.030

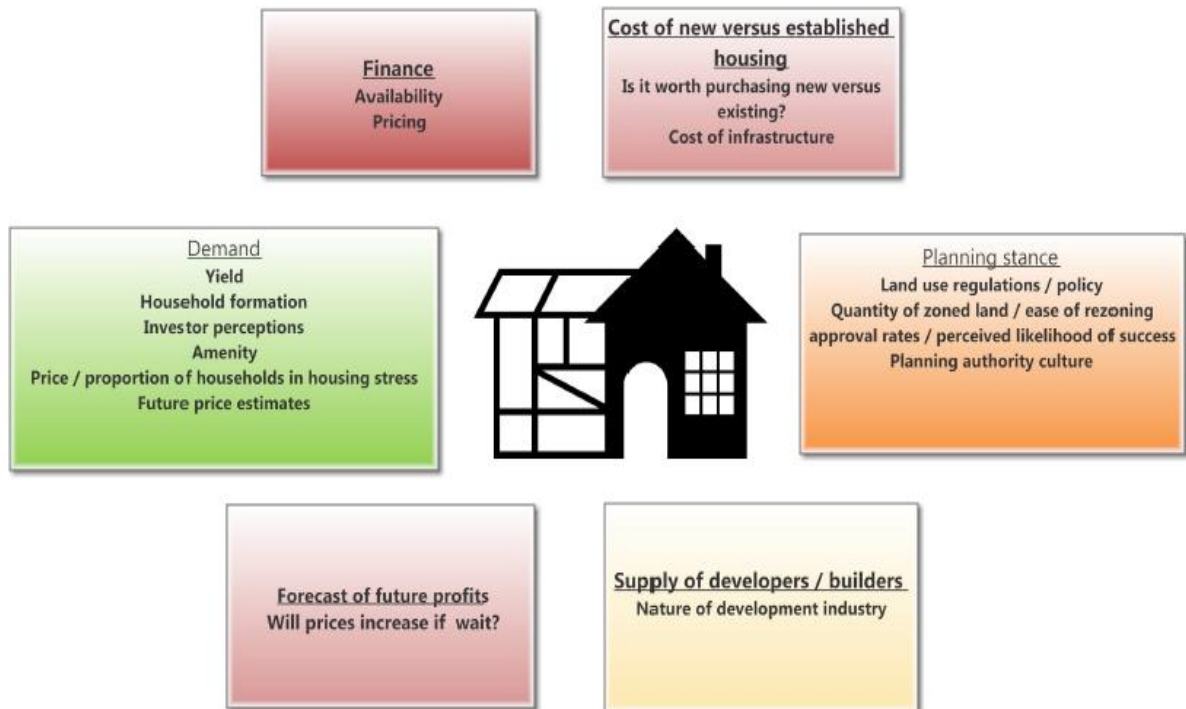
Source: the authors, derived from Department of Planning 2008; 2010; 2011

Given the limited extent of planning measures for affordable housing inclusion in NSW, it is not possible to replicate Professor Bramley's analysis of relationships between planning obligations for affordable housing and overall housing supply outcomes. However, a parallel AHURI research study (Project 70691 *Affordable housing, urban renewal and planning*) is examining this issue in a qualitative way.

5.4 A conceptual model

In developing a schematic model for examining relationships between the planning system and housing market outcomes in Australia, our intention was to identify and explain the range of influences on these relationships, as a basis for further empirical investigation. Our particular purpose is to understand the nature and scale of planning impact, in the context of the wider factors known to influence the housing market. By properly 'nesting' planning within this wider context it is possible that relative impacts may appear less significant than implied by previous quantitative studies focusing on a narrower set of data. Both academic and practitioner panellists endorsed this wider approach. Therefore our model is influenced by the schematic representation of the sub regional housing market simulation developed by Professor Bramley to inform the panel deliberation (Figure A1), but extends to a range of other factors influencing the planning and development process. These are summarised in Figure 4.

Figure 4: Planning and residential development in Australia: a conceptual model



Source: the authors

As shown in Figure 4, a number of potentially measurable factors are shown to influence demand for housing at the local level. These include the range of household indicators identified above as well as locational factors associated with the amenity of the area in question, and financial considerations such as potential investment yield. The availability and cost of finance is shown separately as an exogenous consideration. Another potential measure of demand, ‘the cost of new versus established housing’, incorporates important considerations known to influence developer behaviour, such as the value of new versus existing housing, and the relative burden of infrastructure costs.

While it would be very difficult to obtain quantitative data on developer perceptions of future profit (that is, whether there is an expectation that profits will increase by waiting or by staggering the build/sale rate as proposed by Ball (2010) in relation to the UK), this is an important consideration as it may help explain the distance between residential building approval figures and actual completions. This gap is often posited as a simple time lag, however in Australia expert panellists advised that the relationship between approvals and completions is highly variable and difficult to predict. This is likely due to the particular nature of Australia’s residential development industry, where specialist land development firms often operate independently to house builders (Burke & Hulse 2010).

This issue relates to the fifth cluster of variables shown in the conceptual model—that is, the supply of developers or builders and the nature of the development industry itself. Here considerations may simply be whether there is a shortage of construction workers following a period of downturn, or more complex factors such as the size and variety of firms within a particular region.

Finally, planning is shown as a bundle of considerations underlying the concept of 'planning stance'. These include factors relating to the opportunities for residential development created through the planning system (driven by the policy orientation of planning strategies and regulations) through to the availability of developable (zoned) land and the process for obtaining dwelling approvals. Perceptions about this process—for instance, the perceived complexity, timeframes, and likelihood of approval, are also likely to be influential, meaning that qualitative data should support such indicators.

5.5 Summary

This section of the report has developed a typology of planning system and housing market measures and indicators with reference to the existing literature and our investigative panel deliberations. Drawing on work developed by Professor Bramley for this study, we then demonstrate the potential application of several of these measures to local planning authorities and sub-regional housing markets in England, finding that their impact varies under different spatial and development contexts. Using the English illustration as a reference point, we then examine the potential to replicate such work, applying data available in relation to the Sydney metropolitan region. Our preliminary efforts indicate that existing sources of information are not sufficient to replicate such work and that simple quantitative analyses of planning performance and or relationships between particular planning approaches, and housing market outcomes are potentially misleading. Our review of Australian data sources and panel deliberations suggest similar limitations exist across the Australian jurisdictions. To establish a more holistic basis for understanding and monitoring relationships between the planning system and the housing market in future, we propose a conceptual model, contextualising planning in relation to the wider range of factors influencing housing outcomes. Future research effort will develop and populate this model³.

³ Members of the research team have commenced a 3 year study funded by the Australian Research Council (ARC), entitled "Measuring the impact of urban regulation on housing affordability in Australian cities and regions".

6 CONCLUSION: TOWARDS A COMPREHENSIVE RESEARCH FRAMEWORK

This project aimed to establish a framework for examining how spatial policy, planning regulation, and infrastructure charging regimes influence housing market outcomes across Australian cities and regions; to inform the planning and housing reform policy; and provide a basis for ongoing monitoring of planning system performance. Via an investigative panel of planning and housing researchers, policy makers, and industry leaders, this study examined:

- How planning system performance (e.g. policy settings, land release, development regulations, infrastructure charging, approval processes, timelines) is measured across the UK, the US, Australia and New Zealand.
- What existing measures and data suggest in terms of planning system performance and relative housing market efficiency (land and housing supply and affordability).
- How specific affordable housing or housing diversity requirements (such as inclusionary zoning or dwelling mix mandates) might affect planning system performance and housing market efficiency.
- Policy implications in relation to Australia's housing reform agenda, and the ongoing review and monitoring of planning system performance.

In this concluding section of the report we summarise key findings in relation to these key issues and the wider research and literature on planning and the housing market. This wider literature, reviewed in Sections 2 and 3 of this report, draws on the tradition of performance management in the public sector, focusing largely on the performance of the service aspects of planning practice (Mastop & Needham 1997; Carmona & Sieh 2008) as well as whether and how planning achieves its stated objectives or results in other, unanticipated outcomes, such as blockages in the supply of land or housing. Although much of the literature, which has derived largely from the US and the UK, suggests that planning is often associated with increased house prices (a key policy concern) demonstrating cause and effect is much more complex.

To the extent that planning might have quantifiable effects on land or house prices, this might arise from positive policy intention ('good' planning creating or preserving amenity (Ihlanfeldt 2009)) or supply constraint (associated with specific actual or perceived development controls) (Monk & Whitehead 1999, Monk et al. 1996, Bramley & Leishman 2005). A key challenge is to situate planning in relation to the range of factors influencing urban change and the housing market including geographic constraints and opportunities, underlying population growth and household formation, industry, unemployment and income trends, interest rates and inflation, price to rent ratios (as an indicator of returns on housing investment); and the potential value of alternative investments such as the stock market (Otto 2007, Hui & Ho 2003, Malpezzi 2002, Saiz 2010). These studies demonstrate the need for a wide evaluative framework supported by a full spectrum of indicators to understand the range of outcomes that may arise from different planning interventions, in different spatial, community, and political contexts.

6.1 Comparing planning system performance measurement across Australia, New Zealand, the US and the UK

Our comparison of approaches to measuring planning system performance in general, and housing market trends in particular, across Australia, New Zealand, the UK and the US, highlighted significant differences in approach. Contextual factors, such as structures of government and systems of housing provision, help explain these differences. In the UK, appropriate housing for all has been an important objective of land use planning, and there has been a long established process for reporting against the achievement of housing targets set at regional and local levels. Similarly, in the three North American states of Washington, California and Massachusetts, as well as at the regional and local level, systematic reporting of progress towards a range of land use planning, housing, and affordability objectives occurs. By contrast, in Australia and New Zealand, planning performance measures have focussed on indicators of system efficiency, and even these are of a limited nature. This is beginning to change however, as national urban policy and COAG performance frameworks for capital city planning systems evolve.

6.2 Planning system performance and relative housing market efficiency

In examining what existing measures and data might suggest in terms of planning system performance and relative housing market efficiency (land and housing supply and affordability), we were limited by the state of Australian data. However, the illustrative modelling undertaken by Professor Bramley, using data pertaining to sub regional housing markets of England suggests that:

- 'Planning stance' (as a composite indicator of local authority policy orientation towards accommodating or limiting new housing growth) appears to have considerable impact in the UK.
- Narrow 'system efficiency' indicators (which focus on e.g. decision speed and rates of approval) are often used as a proxy for planning stance, are generally not reliable predictors of housing market outcomes, particularly in comparison to analyses of geographical land constraints.
- Residential development type and context affects the flow of planning permission, supporting the expectation that more complex sites will require more intensive assessment. However, this may change over time as local authority staff gain confidence in dealing with multi-unit developments.

Panellist's emphasised the limitations of current Australian information sources and the need to capture a wider range of quantitative and qualitative data for planning performance and the housing market. A preliminary analysis of existing Australian data on planning performance in relation to housing supply (focusing on the Sydney metropolitan region in NSW) found that commonly used indicators of 'planning stance'—residential approval rates, and decision times—have little weight when considered in relation to community factors such as median incomes.

6.3 Specific housing requirements and wider planning system performance

There has been considerable concern in Australia about the potential impact of additional, specific planning requirements, such as requirements to contribute towards affordable housing. However, the modelling undertaken by Professor Bramley found a

positive relationship between rates of new social housing completions, and overall housing supply at the local level. As a growing proportion of social housing in England is delivered through the planning process, this is an important finding, implying that affordable housing requirements, once embedded, do not have a negative impact on overall rates of new housing supply within a local area. Professor Bramley identifies two main reasons for this: firstly, that higher volumes of new social housing within an area is likely indicative of an overall planning stance that is positive towards housing development. Secondly, social housing developers are able to operate counter cyclically and so maintain output even during constrained financial times. Advice provided by industry panellists suggested that affordable housing requirements, like other regulatory burdens, would not be problematic in the Australian context if situated within a planning system offering clarity and certainty in decision making, charging, and infrastructure provision.

6.4 Policy implications in relation to Australia's housing reform agenda, and the ongoing review and monitoring of planning system performance

This study has raised a number of implications for Australia's ongoing planning and housing reform agendas, and the establishment of an appropriate evidentiary framework for reviewing and monitoring performance. First, there is a need to better integrate urban policy, planning regulation and housing goals, articulating higher order objectives for regional and local interpretation. The growing suite of national urban policies and review processes (e.g. Department of Infrastructure and Transport 2011; COAG Reform Council 2011b; NHSC 2011) suggest a shift in this direction, but there is potential for more explicit synthesis of urban and housing agendas.

Second, a wide spectrum of goals (and corresponding measures) for planning performance are needed; moving beyond basic emphases on residential land supply and the flow of dwelling approvals to higher order objectives and deeper approaches to data collection and review. This wider framework is consistent with the emerging national urban policy agenda, provided that measurable indicators and reporting processes are established. It will be important to begin to collate more consistent and comparable indicators of planning system outputs and housing market trends as well. A wide spectrum of goals (and corresponding measures) are needed, moving beyond basic emphases on residential land supply and the flow of dwelling approvals to higher order objectives, and more systematic approaches to data collection and review. Drawing on the international examples, at minimum annual local data sets should address:

- Dwelling completions (as distinct from land release or dwelling approvals).
- Net dwelling additions.
- The proportion of new homes affordable to different income groups.
- The environmental performance of new housing.
- Infrastructure contribution costs.

Again, while Australia has only recently begun systematised reporting on housing supply outcomes at national, let alone state and local levels, this has coincided with the steady trend towards reporting on planning processes and outputs at local and regional scales (Local Government and Planning Ministers' Council 2011). There is an opportunity to extend new planning system performance frameworks to capture data on a wider range of outcomes, including those relating to housing.

Thirdly, many of the current assumptions about planning system performance and potential relationships to housing supply and affordability seem unsupported by the evidence available, limited though this evidence may be. For instance, rather than indicating efficient or sluggish performance, in Sydney at least, planning decision times appear related to impacted by mean household income (processing times increase in wealthier LGAs), the number of applications processed (the greater the volume the slower the times) and the number of DAs determined by staff (rather than by elected councillors). By extension it would be difficult to assert a causal relationship between sluggish planning performance and the higher median house prices also observed in these localities. Further research, drawing on the framework developed through the investigative panel deliberations and partially demonstrated in relation to data pertaining to the UK, would provide a platform for more informed and policy relevant analysis of the relationships between the planning system and housing outcomes in the future.

Finally, preliminary modelling undertaken as part of this study suggest that policies to secure affordable housing in new development are more likely to increase housing supply than discourage new development, at least in the case of the UK. Bringing Australia's planning and reform agendas together may provide a basis for shifting away from relatively narrow system efficiency concerns (e.g. Productivity Commission 2011 p.423; NSW Department of Planning 2010) towards a wider spectrum of performance objectives for sustainable cities and regions. This suggests that policy development in Australia might focus on supporting and measuring more positive interactions between planning, housing supply and affordability in the future. In practice, this would require affordable housing targets to be reframed as a supply lever rather than a regulatory burden, implying more nuanced approaches to the design and critical evaluation of planning tools and processes.

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APPENDICES

Appendix 1: Panel Participants

Housing and Planning Researchers:

- Dr. Patricia Austin, Senior Lecturer, School of Architecture and Planning, University of Auckland.
- Professor Glen Bramley, Professor/Head of Institute, School of the Built Environment, Heriot-Watt University.
- Associate Professor Robin Goodman, Director of AHURI RMIT Research, School of Social Science, Global Studies and Planning, RMIT University.
- Associate Professor Heather MacDonald, Head of School, School of the Built Environment, University of Technology Sydney.
- Dr. Steven Rowley, Senior Lecturer and Head of Department of Property Studies, School of Economics and Finance, Curtin University.
- Associate Professor Glen Searle, School of Geography Planning and Environmental Management, University of Queensland.

Expert Practitioners and Policy Leaders:

- Rob Bennett, Planning Manager NSW/ACT, Lend Lease.
- Deborah Dearing, National Manager—Strategic Urban Planning, Stockland.
- Sarah Hill, Principal (Social and Economic Planning Division) and Practice Manager, HILL PDA.
- Sue Holliday, Member, National Housing Supply Council.
- Anne Hurni, Senior Policy Analyst, Major Cities Unit.
- Caryn Kakas, Executive Director, Residential Development Council, Property Council of Australia.
- Sally Lewis, Walker Corporation Pty Ltd.
- Simon Micmacher, Senior Project Officer, Strategic Policy, Research and Forecasting Division, Department of Planning and Community Development, Victoria.
- Gary White, Government Planner, Department of Local Government and Planning, Queensland.

University of Sydney / University of Western Sydney Researchers:

- Associate Professor Nicole Gurran, Faculty of Architecture, Design and Planning, University of Sydney.
- Professor Peter Phibbs, Urban Research Centre, University of Western Sydney
- Catherine Gilbert, Research Assistant, University of Sydney

Biographies of International Housing and Planning Researchers:

Dr. Patricia Austin

Dr. Patricia Austin is a renowned planning academic and practitioner whose recent work examines how the New Zealand planning system supports affordable housing supply. She is currently a Senior Lecturer in the School of Architecture and Planning at the University of Auckland, New Zealand.

Professor Glen Bramley

Professor Glen Bramley (UK) is one of Britain's leading experts on housing and urban economics. He has led a series of projects to measure and model relationships between planning systems and housing supply and affordability outcomes, and provided senior advice to the UK government through his appointment to the Board of the National Housing and Planning Advice Unit. Glen Bramley has been a Professor at Heriot-Watt University in Edinburgh for over 15 years.

Appendix 2: Participant Organisations

Participants in the 6 December Investigative Panel were invited for their expertise and practical experience in housing and planning matters, from both the public and private sector perspective. Below are brief descriptions of the organisations represented at the 6 December Panel. These descriptions have primarily been derived from the organisation's websites. Note that participant's views as expressed at the Investigative Panel are not necessarily a direct representation of the views of the participant's organisations.

Department of Local Government and Planning, Queensland

The Department of Local Government and Planning was established in February 2011 from the former Department of Infrastructure and Planning. Its priorities include:

- equipping Queensland with a 21st century planning, building and development system
- working with local government across Queensland to build capacity
- effective, efficient and sustainable local governments through legislative reform
- coordinating integrated planning to support well managed sustainable growth
- planning and development that anticipates and supports growth.

See: <http://dlgp.qld.gov.au/our-department/>

Department of Planning and Community Development, Victoria

The Department of Planning and Community Development's (DPCD) key focus is managing Victoria's growth, development and building. The Department develops long-term plans for Victoria's regions and cities, invests in infrastructure and services, supports the development of local communities, provides research, policy and planning advice and administers legislation and regulation. The Department also facilitates partnerships across Victoria's government, business and community sectors and coordinates whole-of-government responses to a broad range of economic, social and environmental issues.

<http://www.dpcd.vic.gov.au/home/about>

Hill PDA

Hill PDA is an independent consultancy specialising in strategic property advice and valuations. The team includes land economists, urban planners, valuers and geographers with expertise in a broad spectrum of land uses, including residential, retail, office, industrial, hospitality, recreation and community uses. Hill PDA has undertaken projects for government bodies at all levels, private sector corporations and other organisations.

<http://www.hillpda.com/index.html>

Lend Lease

Lend Lease is a leading international property and infrastructure group with expertise in project funding, development and construction. The company's world class portfolio of property and infrastructure projects includes roads, bridges, hospitals, residential communities, workplaces and retail destinations.

<http://www.lendlease.com/Group/Lend-Lease/Australia/Home.aspx>

Major Cities Unit

The Major Cities Unit (MCU) is part of the Department of Infrastructure and Transport. It oversees the implementation of the Australian Government's National Urban Policy. The MCU reports annually on the performance of Australia's major cities in the State of Australian Cities report.

<http://www.infrastructure.gov.au/infrastructure/mcu/about.aspx>

National Housing Supply Council

The National Housing Supply Council was established by the Australian Government in 2008 to monitor housing demand, supply and affordability and to highlight current and potential gaps between housing supply and demand. It operates at arms-length from government and reports to the Minister for Housing and Homelessness. The Council produces annual State of Supply Reports which aggregate data and information on land supply and housing demand. The Council's members are drawn from a range of sectors including academia, finance, economics, building, planning and urban development. A Data Sub Group supports the work of the Council.

<http://www.nhsc.org.au/>

Property Council of Australia

The Property Council of Australia is the nation's leading advocate for the property industry. It represents the interests of major investors, property owners, developers, and development industry professional service and trade providers. Its goals are to:

- foster a more attractive asset class;
- secure economic growth leveraged by long-term nation-building programs;
- create a more competitive business environment by improving access to finance, as well as reforming taxes and regulation;
- promote a positive image for the property industry that reflects its critical community role;
- deliver high value member services, including:
 - world-class management and benchmarking tools, market intelligence and insights into industry trends;
 - education and professional development;
 - sharply-focussed networking and market-making opportunities, a showcase for industry excellence, and
 - gateways to international networks and markets.

<http://www.propertyoz.com.au/Content.aspx?p=40>

Stockland

Stockland is one of Australia's leading diversified property groups, managing a large portfolio that includes master-planned and mixed-use residential communities, retirement communities and office, retail and industrial assets. Stockland is Australia's leading retail property owner and is a leading residential developer.

<http://www.stockland.com.au/about-stockland.htm>

Walker Corporation

Walker Corporation Pty Ltd is a leading developer of master-planned residential communities and residential, retail and industrial projects. Walker Corporation has experience and expertise in planning, project management, finance, joint venture and development structures, infrastructure development and marketing.

<http://www.walkercorp.com.au/index.asp>

Appendix 3: Panel Agenda (Housing and Planning Researchers, 21-22 November 2011)



QUANTIFYING PLANNING SYSTEM PERFORMANCE AND THE NATIONAL HOUSING REFORM AGENDA

Investigative Panel Meeting: 21-22 November 2011

University of Sydney Darlington Centre

Convenors

Associate Professor Nicole Gurrán, University of Sydney

Professor Peter Phibbs, University of Western Sydney

Monday, 21 November 2011

Measuring planning system performance and housing system outcomes

12:15pm - 1:00pm	Arrival / lunch
1:00pm - 2.30pm	Project introduction Review paper Objectives for panel meeting
2.30pm—3:00pm	Break
3:00pm—6.00pm	Performance measurement, planning and housing—international and Australian approaches <i>(Session to canvass existing approaches to measuring planning system performance and to measuring housing / supply and affordability by jurisdiction; existing / potential interface between planning system and housing system performance measurement; data sources and availability; as well as general panellist perspectives on performance measurement in relation to planning/ housing systems and outcomes)</i>
3.00pm - 4:00pm	United Kingdom (Glen Bramley)
4:00pm - 4.30pm	New Zealand (Patricia Austin)

4.30pm - 4.40pm	Break
4.40pm - 6:00pm	United States (Nicole Gurrán & Catherine Gilbert) Western Australia (Steven Rowley) Victoria (Robin Goodman) Queensland (Glen Searle)
7:00pm—9:00pm	Dinner (venue to be advised)

Tuesday, 22 November 2011

Designing a research framework for ongoing measurement of relationships between the planning system and housing market outcomes in Australia

9.30am—11:00am	Brainstorming Performance measurement in planning / housing—definitions; measures; indicators Relationships between planning system and housing outcomes—types of relationships; measures / indicators of relationships What would an optimum model do / look like? Data availability?
11:00am - 11.30am	Break
11.30am—1:00pm	Substantiation - finalising the model Scale Geography / housing markets Time - longitudinal analysis versus post policy change analysis Operational considerations Questions / issues for clarification with data / industry professionals
1:00pm	Lunch / close

Appendix 4: Panel Agenda (Expert Practitioners and Policy Leaders, 6 December 2011)



Australian Housing
and Urban Research Institute

QUANTIFYING PLANNING SYSTEM PERFORMANCE AND THE NATIONAL HOUSING REFORM AGENDA

Investigative Panel Meeting: 6 December 2011

Convenors

Associate Professor Nicole Gurrán

Professor Peter Phibbs

Agenda

2.00-2.15pm	Welcome and introduction to the study
2.15-2.30pm	Performance measurement, planning and housing—the work so far
2.30-3.30pm	<p>Discussion—Measuring planning performance</p> <p>What are the overarching planning system goals / specific objectives/ expectations for the housing market (supply and affordability)?</p> <p>What are the indicators of performance?</p> <p>How should these be measured?</p>
3.30- 3.45pm	Break
3.45-4.30pm	<p>Discussion—Evaluation model</p> <p>Demonstration of potential evaluation model</p> <p>What data sources are or could be available to populate the model?</p> <p>Issues of reliability and validity</p>
4.30pm-5.00pm	<p>Summary</p> <p>Project next steps</p>

Appendix 5: Thematic Summary of Panel Discussion (Housing and Planning Researchers, 21-22 November 2011)

Overarching planning system and housing market goals and objectives as a basis for performance measurement

There are two levels of planning system / housing market goals and objectives:

- Normative / universal for spatial planning policy and housing markets (e.g. Ecologically Sustainable Development; Appropriate, Affordable, Accessible Housing model); and for governance / administrative / system operations (e.g. efficiency, equity).
- Empirical / grounded (articulated by jurisdiction/ spatial scale; identified through qualitative analysis of national, state, regional, local level policies / strategies / plans).

Indicators for measuring achievement against these objectives and goals

These might relate to measures of planning system efficiency as well as performance against specific spatial policy and housing market objectives.

Relevant planning system features and policy orientation (for comparison)

The variables below were considered important for contextualising performance and understanding which elements of system operation are associated with particular spatial planning and or housing market goals:

- State planning system (this might be a very widely defined, qualitative indicator, or could be derived from a series of quantitative comparisons relating to *complexity* - such as the number of different planning bodies with statutory authority; the number of planning and related laws; *centralisation*—provisions for state 'call up' powers; approach to articulating state / regional policy (statutory versus non-statutory plans); extent of *codification* (i.e. number of code assessed applications versus discretionary decisions as a proportion of total); *contestability* (rates of appeal); *flexibility* (process for changing plans / rezoning triggers / accommodating unforeseen proposals); *predictability* (e.g. number of appeals upheld; quantity of decisions made by professional staff versus elected representatives); *efficiency* (median time for DA approval; median delay time (i.e. number of days beyond statutory approval timeframe); *policy orientation* (e.g. constraining, accommodating, containing growth - per cent target for Greenfield versus infill development; per cent balance of new development; per cent density targets / achieved).
- Local planning system (This might be a very widely defined, qualitative indicator, or could be derived from a series of quantitative comparisons, matching the state indicators outlined above, including *complexity* - the number / length of local planning instruments; *codification* (i.e. number of code assessed applications versus discretionary decisions as a proportion of total); *contestability* (rates of appeal); *predictability* (e.g. number of appeals upheld; quantity of decisions made by professional staff versus elected representatives); *efficiency* (median time for DA approval; median delay time (i.e. number of days beyond statutory approval timeframe); *resourcing* (number of professional planning staff (and as a ratio to development applications); *policy orientation* (e.g. constraining, accommodating, containing growth - per cent target for Greenfield versus infill development; per cent balance of new development; per cent density targets / achieved).

- Regulation (i.e. relative concentration of requirements / stringency versus accommodation; requires detailed review of planning controls, at state and or local levels).
- Development charges (a potential subset of regulation assessing the rate of charges (e.g. amount per dwelling, lot, or land area); method of calculation (i.e. formula, levy [per cent of development value], negotiated agreement; purpose / distribution (from parking and or open space, to sites and services, community facilities, regional infrastructure items, affordable housing); payment (on approval; on completion; on sale; in kind / up front provision); stability / volatility / consistency of charging regime (i.e. number of potential charging approaches per jurisdiction (state/local level); number of changes to legislation/ charging amount; appeals to charging requirements).
- Infrastructure provision (a potential subset of development charges assessing approaches to servicing / sequencing new urban development (i.e. infrastructure provided 'up front' in designated locations / versus follows development; contiguous development sequencing / versus leap frog).

Panel members emphasised the need to scrutinise these indicators with a second tier level of qualitative analysis. For instance:

Developer perceptions

- Do developer perceptions of each planning system (e.g. complexity, predictability, speed, rezoning processes, infrastructure requirements etc.) match this data?
- What are developers' personal experiences / relationships with particular planning authorities / staff?
- Do perspectives differ according to the size of the development firm, and the number of trained planning personnel on staff?

Perspectives of planners

- How do they rate their own systems (state/local) in relation to these criteria (particularly complexity, efficiency/ delays and the causes for these, if any; predictability/ consistency; levels of council involvement etc.).
- Planner mobility—between jobs and into/out of planning profession.
- Policy stance / perceived policy stance of elected officials (State/local) in relation to growth, and Greenfield / Brownfield development.

Relevant planning performance measures / indicators

The panel emphasised the need to contextualise planning performance measurement within a holistic view of spatial policy / planning objectives, as well as specific housing market considerations.

At the regional / neighbourhood scale, indicators of planning performance might relate to the following:

- Amenity of community / neighbourhood (subjective community evaluation or spatial analysis of greenspace / facilities)
- Efficiency of urban form (accessibility to jobs, services, leisure facilities, jobs / housing mix, provision of public transport and active transport)
- Mix of housing type and tenure
- Urban greenspace/ biodiversity / environmental quality

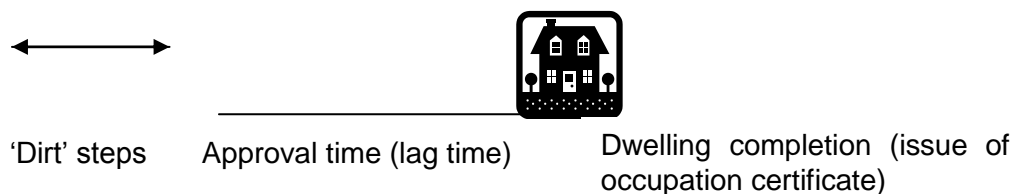
→ Ongoing development activity and population mobility?

However, determining the particular contribution of planning to these outcomes is more difficult.

More specific approaches to measuring the influence of planning, in relation to housing, might relate to analysing set targets for housing supply and density against plan controls / implementation provisions (for instance, zoning provisions and requirements / incentives), and actual outcomes over time (i.e. the completion ratio: total approvals versus completions (occupation certificates))

The panel suggested comparing both the procedural steps / requirements as well as the time taken from 'dirt' (i.e. rural land) to rezoning, subdivision, residential development approval, provision of infrastructure, to construction and completion of a dwelling (Fig 1).

Fig 1: steps from dirt to approval completion of dwelling



Existing approaches to measurement, potential data sources, and data gaps

Existing and potential approaches to measuring planning system and housing market performance, as well as specific data sources were primarily discussed by jurisdiction, using the reference paper prepared to inform the panel discussion as a starting point.

The discussion recorded here is confined to elaborating on data sources and collection processes identified in the reference paper rather than being exhaustive, therefore the main emphasis is on the UK and New Zealand.

United Kingdom

Although the UK potentially has a deeper well of housing market and planning data, linking housing outcomes to planning systems has remained a difficult research problem.

Measures that have been contemplated in the UK include:

- The amount of land made available for housing (in the short term, this might equal land with permissions for housing development, but the data point has been numerical targets for new housing. There are questions as to whether there is actual land available to meet these targets.
- Development charges (section 106 obligations collected), as a proxy for overall development obligations.

- Policy stance (noted that this has been difficult to measure as it requires qualitative reading of plans, or must be inferred through approval/refusal measure) plus external policy (e.g. State/ regional) (which also requires qualitative reading).
- Types of sites (high number of small sites hypothesised to result in lower overall supply; also regarded as indicative of planning stance (i.e. infill rather than new release). Note that this measure might be more relevant in jurisdictions where local views dominating State ones (NSW & WA targets are set by state).
- Approval rate (while this indicator is of some value, it was noted that high demand locations are likely to have higher numbers of non-conforming developments and, consequently, higher refusal rates).
- Share of new housing built on brownfield sites (while this is a planning outcome, it may have influence on volume of new supply as outlined above).
- Political affiliations of local governments.

New Zealand

In New Zealand, 3 items of legislation govern planning and development:

- Local Govt. Act 2002—addresses infrastructure for local government.
- Resource Management Act 1990—environmental impacts of development; including zoning and development entitlements; framework for environmental / urban policy.
- Land Transport Management Act—covers national and regional transport strategy, funding, and planning.

Note that plans prepared under the Resource Management Act (RMA) exhibit much local variation—there are 300 different zones across New Zealand, none of which are alike, and changing planning instruments is very expensive.

Approaches to performance review:

- District plans are monitored and assessed every 10 years.
- Process performance monitored under the RMA (including refusal rates, number of notifications and decisions on time, appeal statistics).
- Decisions and notification processes timely—dramatically improved after councils penalised for being too slow.

Australia

Measurement processes and data sources identified in the discussion paper were endorsed by panel members, however, particular data gaps were identified:

- difficulty of measuring activity (i.e. starts / completions) versus permissions, noting that targets are typically measured against permissions rather than completions;
- lack of data on net dwelling additions (likely that strata redevelopment in high value areas is resulting in a loss of overall dwelling units as developers target a premium market), and
- per cent of local/regional housing market that is new supply (i.e. is planning's impact at the margin of the market?).

In addition, there has been limited thinking on potential measures of urban / regional / neighbourhood performance, and the role of planning in driving this performance.

General

Finally, this discussion highlighted the need to consider the differences in planning systems and contexts when comparing jurisdictions. For instance, the UK is characterised by a single planning system, with a high level of synchronicity between national planning and housing policy (with social impact / housing outcomes very much a material planning consideration). The UK also has a highly discretionary decision making process. By contrast, in New Zealand, the legislative framework governing planning and development is disjointed, leaves limited or no room for consideration of social / economic factors, and tends towards the allocation of fixed development rights. The different Australian planning jurisdictions are likely to also demonstrate variations in relation to cohesion between state planning and housing policy, the capacity to address social and economic considerations in plan making and development approval, and the level of codification or discretionary decisions making. Additionally, when considering the four Australian jurisdictions represented by panel members, particular trends were apparent:

- In WA there has been a period of high levels of residential land release but also ongoing high land and housing values; with available land disconnected from high demand locations.
- Victoria has been characterised by a policy aspiration of growth containment; but a lack of implementation tools; further undermined by 3rd party appeals which reduce the capacity to develop higher density and infill housing in existing locations.
- In Queensland there have been substantial changes to governance arrangements following a period of local government amalgamation, and potential for a gap between articulated State / regional policy and the content of local planning instruments, which have not all been amended to reflect new changes.
- In NSW the story is complicated by the preponderance of development demand in high value locations, meaning that many developments are likely to be non-complying. This is likely to lead to delays / and uncertainty irrespective of the quality of the planning system / process. Further, there has been a decade of planning system change, exacerbating uncertainty.

Approaches for measurement

Drawing on the measures outlined above, the following quantitative data points might be used in a model for Australian planning jurisdictions, noting that not all indicators are relevant or available in all jurisdictions:

Table A1: Measures and indicators

Scale	Measure/ Indicator	Source	NSW	QLD	VIC	WA
S/L	Codification	Code assessed: total DAs	✓			
S/L	Predictability	% DAs assessed by council staff				
S/L		% of DAs appealed	✓	✓	✓	
S/L		% appeals upheld	✓		✓	
S/L	Efficiency	Median DA approval time	✓		✓	
S/L		Median DA approval time:	✓			
		Statutory timeframe				
State	Policy orientation (e.g.	New housing supply	✓			

Scale	Measure/ Indicator	Source	NSW	QLD	VIC	WA
	growth accommodation/ constraint containment)	targets: predicted household growth rate	able to be deriv ed			
State		% of overall housing in existing vs. Greenfield locations	✓	✓	✓	✓
S/L		% new housing attached/ detached	✓			
S/L	Development charges	\$ per lot / dwelling				
Local	Regulation	Relative concentration of local controls	✓	✓	✓	✓
Local	Resourcing	Number of planning staff: DAs	✓			

S/L = State and local

In addition to the above, in building a model for measurement the panel identified the following factors that need to be considered as part of the 'null case' (i.e. the non-planning system factors that affect housing supply):

- Land is a fixed quantity.
- Market cycles (construct a 'dummy variable' to demonstrate this?).
- Market expectations—was there a housing bubble?
- Demand for lending.
- Financial attitudes to lending.
- Availability of finance.
- Have prices risen as a proportion of income?
- Proportion of housing for owner occupation versus investment (of new housing?)
- Tenure outcomes following housing mix policies implemented on the fringe?

External factors:

- International purchasing.
- Foreign investment laws (only for new housing?).
- Demographic change.

Other factors to consider:

- Proportion of area / development taken 'offline' through master plans
- Land price movements over time (is it possible to standardise prices controlling for location and accessibility?)

Panel members argued for a need to look very carefully at the full relationships between planning, housing supply and affordability. Several panel members indicated that the international literature tended towards over simplification of these factors. However, in developing a research model for application in Australia, there is a need to balance what is important and valid with what is actually able to be achieved based on the availability of data.

Appendix 6: Thematic Summary of Panel Discussion (Expert Practitioners and Policy leaders, 6 December 2011)

1. Overarching planning system and housing market goals and objectives as a basis for performance measurement

Overall

The panel emphasised the need for clear planning system objectives to be specified at all scales, including national, state and regional levels, and to complement or 'enable' particular policy goals, such as housing supply, within local planning schemes.

Some participants referred to the need for a 'story' for strategic planning (i.e. what a local government area wants to do for a particular local community).

There is also a need for alignment between regulation / the statutory system, and overarching strategic spatial objectives. Panellists referred to two new sources of planning objectives:

- National Urban Policy 2011 (which sets objectives for planning process);
- COAG criteria for capital city planning systems.

Planning system objectives:

- Consultation and engagement
- Speed and efficiency
- Certainty / consistency
- Enable rather than frustrate
- Achievable (i.e. the private sector should be actually able to deliver them)
- Articulation of national / State level goals (for delivery through a regional approach)
- Test: is there a clear regional plan? Is it supported by implementation tools (either regulation or finance)?
- Alignment of land use planning and infrastructure
- Public interest / community goals (noted that 'not all spatial goals will be commercially viable')

Housing market objectives:

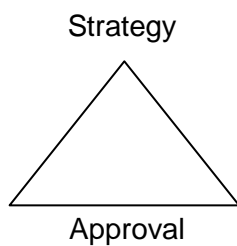
- Homes 'up and occupied' / dwellings completed and occupied (not just land rezoned)
- Location of dwellings (avoiding blight)
- Appropriateness of house types in relation to family / household composition (e.g. avoiding an excess of one bedroom apartments)
- Housing quality and the quality of the environment
- Range of sectors (tenures)

- Range of price points consistent with market demand
- Affordable housing.

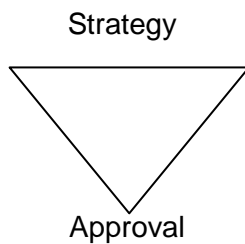
General discussion

In discussion, panellists referred to the need for an 'enabling culture'. This would focus on strategic policy to enable efficient development and to avoid a 'back-ended' system where the assessment and approval process is lengthy and complex. In an improved system, the strategic planning phase would have the greatest attention. This was described with reference to a triangle, as illustrated below:

From:



to:



Others said that planning should prevent worst excesses.

There was discussion about the static nature of planning laws, when sufficient flexibility to allow for innovation is needed.

2. *Indicators for measuring achievement against these objectives and goals*

Spatial policy performance outcomes:

- Sprawl measures
- Extensions of urban boundaries
- Distance from CBD
- Distance from transport / jobs
- Density
- Access to public transport
- Walkability

- Job density
- Housing diversity
- Sustainability

Housing supply / affordability outcomes for measurement:

- Housing completions (when delivered)
- Price point
- Sub market location
- Electricity connections (as a proxy for completions)
- Geography (i.e. spatial spread of development, context of development constraints/opportunities)
- Housing affordability (median multiple?)
- Tenure mix
- Location
- Mixed income and age communities. Capitals?

System indicators / measures:

- Consistency / certainty of legislation (including number of planning / non-planning Acts that influence decisions)
- State plan / strategy and alignment with subsidiary instruments (i.e. 'Strategic spatial alignment', 'objectives translated through regulation')
- Can large developments be activated?
- Number of planning systems that have special exception mechanisms, like Queensland's Urban Land Development Authority
- Wider measures, including governance, leadership and development culture
- The 'smother' indicator, including:
 - capacity / freedom to negotiate
 - extent of legislation
 - extent of conflicting legislation
- The 'flick' indicator, including:
 - number of deemed refusals
 - number of appeals
 - number of referrals.

Industry indicators / factors that may influence or demonstrate performance:

- Types of developers
- Extent of major developers
- Proportion / mix of small and medium to large developers

- Land size /versus plot sizes
- Disappearance of small developers
- Indicator: number of sites per DA?

Qualitative indicators:

- Interconnectedness of decisions.
- Political culture (including extent of 'beige' politics (where the planning system is used as a way to move back and forward between political / community views in lieu of decision making)).
- 'Value add' of planning (i.e. the extent to which outcomes represent quality, changes to original applications, analysing particular decisions made and whether it might have been different without the planning process).
- Extent to which planners feel they add value to decisions.
- Community perceptions of the planning system overall, as well as their attitudes to change.
- Planning skills base, including education / qualifications and exit rates of planners within a particular jurisdiction.
- Examples of where the planning system works well.

3. *Existing and potential data sources, and data gaps*

In relation to the data sources identified in the discussion paper, participants emphasised a culture of a lack of data collection in Australia and noted differences between jurisdictions. The Major Cities Unit data collection process is the main central source of data on Australian urban areas. The states and territories are at different stages in collecting 'performance' data on indicators such as development application processes and decision times.

Panellists expressed the need for caution in relying on available data, calling for an 'independent audit' of existing figures supplied by local governments.

In relation to planning processes, panellists pointed out that a particular application is never traced through the system to find out the final outcome. It was noted that a jurisdiction may begin with an application for 1000 dwellings but only get 300 in end.

Participants also lamented a lack of data about the impact that different delivery models might make (i.e. do different delivery models work better with different products or different building companies?) There may be a need to challenge the assumption that all developers are the same.

4. *Policy implications*

- Need to articulate specific spatial policy, housing and planning system targets (so these can be measured).
- Need for greater alignment between objectives and regulatory tools (so objectives can be delivered).

- Need interconnected decisions (to meet desired outcomes).
- Need flexibility in objectives and controls (to allow for adjustment to enable policy implementation).

Appendix 7: Professor Glen Bramley's Notes on the English Planning System (for Housing and Planning Researcher Panel, 21-22 November 2011)

Quantifying Planning System Performance: Notes from Observation and Analysis of English planning system, by Professor Glen Bramley

Outline

1. Introductory Remarks
2. Which Types of Measure are Most Important
3. Measuring Planning in the 1990s –Recap
4. Measuring Planning Stance and Outputs up to 2009
5. Key Outcome Measures
6. Estimating the Impact of Planning on Key Outcomes
7. The post-2010 Reforms to Planning In England
8. Predicting Local Sentiment and Potential Changes in Planning Stances
9. The Impact of Planning Obligations (s106) on Outputs and Outcomes
10. Developing Further Measures
11. Implications for Australia and New Zealand

1. Introductory Remarks

These notes have been prepared as a contribution to the Investigative Panel deliberations and potentially to the final report of the project. They draw on research going back over two decades and on recent work featured in various conference and seminar papers provided as background. Recent and current work has focused on trying to develop a working sub-regional economic simulation model for the English housing system at sub-regional levels, initially for NHPAU and more recently for a group of local authorities (Gloucestershire). I also draw on recent analysis of new public attitude survey data from the British Social Attitudes Survey 2010. The former work in particular entails developing and using an extensive dataset at Local Authority District level (n=354 in England) which can be examined both at this level and at the higher sub-regional level or for typologies of districts.

Participants in this research will be well aware of the significant differences between planning in England/UK and systems operating in Australian, New Zealand and USA or Canada. The UK system dating from 1947 entails the 'nationalization' of development rights (including change of use) and all development is subject to discretionary local decisions to grant or refuse planning permission. These decisions must have regard to operative local development frameworks (plans) and other material considerations, including (until 2010) Regional Spatial Strategies which have

contained housing targets. However, the current reforms in England remove the regional tiers and targets and place the onus more strongly on the local level.

The context is obviously one of a relatively small and highly populated country with a well-established (and popular) emphasis on urban containment. In the 1980s and 90s the system was subject to less rapid growth and development than Australia, although in the last 10-15 years the level of demographic growth and demand pressures have built up to a higher level with the onset of large scale net in-migration and the long economic upswing to 2007. This changing context brought housing supply back into the policy frame (Bramley 2007) and led to the Barker (2004) review of housing supply and subsequent policy measures to promote supply. However, the current reform changes the emphasis within this basket of measures, away from top-down targeting towards more use of incentives in a localised system. At the same time the GFC has impacted more severely on UK leading to a prolonged downturn in the market and development activity.

Although your initial discussion paper portrays England as having a relatively sophisticated framework of information and indicators about planning performance, my own view is that the situation very uneven and unsatisfactory, and may deteriorate significantly as a consequence of localism and the reduction in the 'burden' of information returns expected of local authorities.

2. Which types of measure are most important?

Although contemporary performance cultures in government seem to place a great emphasis on monitoring and benchmarking performance of planning authorities, in UK as in Australia, this seems to focus more on procedure and processing than on substantive outputs. There is a generally greater interest in wider outcomes, such as affordability, and considerable data are available on some of these in both countries. However, it is very challenging to link these outcomes to the actual policies, activities, and outputs of local planning.

In my view the most important measures we need are of the amount of land made available through planning for new housing development. In other words, the emphasis should be on quantitative measures of land supply. I think this is a different emphasis from that found in some of the literature and commentaries, where the concern is more with qualitative outcomes, for example in terms of design and type/density mix of new housing, or the broader sustainability of plans, or on the speed of administrative processing of development applications.

While the quantitative availability of land which is ready to develop is clearly critical to supply in the short term, for the longer term we should be investigating ways of characterizing and measuring the potential future supply of land for housing. This requires some more imaginative approaches to measuring physical and environmental constraints and capacities. Within planning, it requires some braver attempts and longer term planning of settlement strategy.

There is also a need to collect more systematic data on the extent and cost of planning obligations and/or development impact fees being sought or collected within the different systems under study. These are becoming more pervasive in UK and other countries, for obvious fiscal and pragmatic reasons, notwithstanding the questioning and lobbying about this issue. This should be feeding into more routinised

assessments of development viability, which is obviously particularly crucial in the current recessionary conditions.

In interpreting these data, I think it is useful to draw a distinction between the 'planning stance' of a local authority and the actual amount of land available. Planning stance refers to the policy orientation of the authority, its propensity to support development in a positive way where possible or the reverse, its propensity to resist development where it can. The actual land available reflects the interaction between planning stance and the objective situation in terms of physical and environmental constraints governing the potential amount of land which might be made available. It also reflects the stage in the planning cycle—whether a LDF has been recently updated—and the possible imposition of top-down targets such as RSS which may to some extent have overridden local preferences. It also reflects to some extent the past and present state of demand—where demand has been slack, a pool of available land may have built up.

3. Measuring Planning in the 1990s

The paper I published on 'Measuring Planning' in *Environment and Planning B* in 1998 was a unique and focused study on what were at that time the best ways of measuring the extent and nature of planning regulation at local level and its impact on new housing supply. It is interesting to revisit this paper in the present context, although some things have changed since then.

The paper developed around a dozen measures but went on to show that these could be grouped into four main 'factors', of which the most important was 'unconstrained land', essentially a longer term picture of land potentially available after discounting built up area, Green Belt, Areas of Outstanding Natural Beauty (AONBs) and National Parks. Next in line and moderately important were the Structure Plan 'provision' numbers, similar to the more recent RSS targets, and the amounts of land with actual planning permission and sites allocated in Local Plans or by LA resolutions. Taken together with some market variables, these were the best predictors of key outputs, such as the flow of new planning permissions, or new build completions. They also significantly influenced wider outcomes including house prices, density and the proportion of flats.

Other measures (some collected through a special survey) captured the extent of second tier 'informal constraints' (e.g. green wedges and buffers), the importance assigned to 'environmental capacity', and recent changes in Structure Plan provisions. Also included were the 'success rate' of planning applications, although like some of the measures just mentioned this was a less effective predictor (notwithstanding the key role assigned to it in certain other studies such as that of Cheshire and Sheppard and the more recent work by Hilber).

The study highlighted a couple of issues arising when modelling with these indicators. One was that some of the indicators were logically linked to others in identity (definitional) relationships and one had to allow for that when interpreting the findings. Secondly, it was argued that several of these were partially endogenous in the sense of being influenced by the state of the market. For example, the success rate of planning applications partly reflected demand conditions, with high demand prompting more 'nonconforming' applications which inevitably had a lower success rate.

A limitation of that study and related papers was that they were essentially based on a couple of cross-sectional snapshots. More recent work has generally moved towards creating annual panel datasets, which are better for modelling market reactions, although not all the planning and land constraint variables are really time-varying even now. The study also worked on a subset of about half of all the LA districts in England, and utilised data from a special self-completion survey as well as a range of official returns.

4. Measuring Planning Stance and Outputs up to 2009

The more recent work mentioned in the introduction has enabled us to assemble a reasonable set of candidate indicators which can be used in modelling the system and market responses. It is still a mixed and somewhat frustrating picture, because of the limitations of official data collection and inconsistencies over time. Only some measures are available on an annual basis; some are available for chunks of several years taken together; some are only available for one point in time (although some of these, e.g. Green Belts, do not vary much over time). Potentially relevant indicators are listed in Table 1 below, showing their definition and data sources used.

Particular frustration concerns the failure of government to maintain a consistent series of returns on land with outstanding planning permission or of sites allocated in local plans/LDFs. Such a dataset was maintained from 1988 to 1997, then discontinued at a critical time. To bridge this gap we use two downloads from a commercial datasets, Emap-Glenigan, which monitors most major housing planning consents. By using this plus new permissions plus completions data with dead reckoning and various adjustments, we have constructed an annual series for land with outstanding permission (units capacity), although we recognise that this contains considerable 'noise'. Since the mid-2000s LPAs have been required to make an Annual Monitoring Return but this is frustratingly not structured as a standard data table and not, so far as I can see, collated by the DCLG as a numerical database.

There is a figure downloadable from the Department for the percentage of five year land supply requirement available in each district (permissions plus other commitments phased within five years). By manually extracting from all of the last set of RSS's the target numbers for each district, I can deduce from this the actual amount of available land (permissions plus allocations/commitments) for one point in time, effectively 2009. The RSS target itself would be a close analogue for the Structure Plan provision figure of the 1990s (Structure Plans being phased out in this period).

The first group of indicators in Table A1 are what can be derived from these efforts, together with the actual number of housing units completed which is the basic outcome of the system in terms of new housing supply. While new private completions is a key output/outcome, the number/rate of new social completions is open to different interpretations. It is argued that this may be a reasonable indicator of planning stance, insofar as local authorities which support a higher level of new social house building have a general stance towards new housing which is more positive.

The next indicator listed in Green Belt as a share of land area. Green Belt is regarded as a relatively hard constraint in the British system, where there has been a long-established presumption against development in the Green Belt which tends to be upheld in planning appeals and strongly supported by local authorities and public opinion. This is particularly important because Green Belts tend to be located around

major urban areas covering land which would otherwise be a prime target for development.

The share of small sites in the overall land supply is hypothesised to be a negative factor in terms of supply potential, and this is borne out by the results of modelling of new build and planning permissions flow. Small sites tend to be more difficult to develop, in the sense that it is more difficult to deliver a high volume of output from a large number of small sites than from a small number of large sites. In addition, a greater proportion of such sites may be controlled by parties who are less interested in delivering house building numbers than in other considerations such as valuation. Furthermore, it may reasonably be argued that where small sites represent a high share of available land this indicates that local authorities have not been able or willing to identify larger sites for development of new urban extensions or new settlements. As such, it may be a reasonable indicator of a restrictive planning stance.

The proportion of planning applications for housing approved may seem to be an obvious measure of planning stance, and has been used as such in several studies (Hilber & Vermeulen 2009; Cheshire & Sheppard 2004; Cheshire & Sheppard 2005). However, as Hilber found in their econometric analysis, and as I argued in 1998, this indicator is partially endogenous, tending to be influenced by situations of high demand or lack of up-to-date approved plans, when more non-conforming sites are put forward. Also, the indicator is lumpy in annual data. A partial response to this situation is to take the value averaged over a longer period. However, as we go on to report, even when taking the longer term average this indicator does not perform very well in predicting new permissions flow or new build rates.

The decision time on planning applications is a favourite measure for those focussed on process efficiency, and some analysts (e.g. Ball 2010) regard this as a significant indicator of planning stance as well as a cause of cost to the industry and supply inelasticity. While there is a priori logic in these arguments, we find in practice that this indicator is not a good predictor of the key outputs we are most interested in.

The share of new housing built on previously developed land (PDL, or brownfield land as it is often known) is an indicator which received increasing emphasis in policy in England in the late 1990s and early 2000s. This was the period when ideas about 'urban renaissance' (Rodgers Report, DETR 1999) and sustainability arguments for more compact urban form were in the ascendancy. Targets were set for this indicator, nationally and regionally, and achievement was measured through the system of Land Use Change Statistics (LUCS). These are derived from Ordnance Survey sweep surveys which identify 'developments' (including redevelopments) and capture this as vector GIS parcels which can be measured in terms of area and classified in terms of use classes of the land before and after development. The overwhelming focus has been upon the one indicator derived from this, the percentage of new housing units on formerly urban land, although density has also been calculated from this. Other quite interesting indicators can be derived but these have received little attention (e.g. the proportion of business uses built on formerly non-urban land, or the amount of land used for transport purposes). The main picture from the data over the last decade and a half has been the sustained increase in urban land share, so this now represents a large majority of new housing land, and the substantially hike in density levels.

PDL might be interpreted as an indirect indicator of planning stance, although it will also reflect hard constraints. In practice, as we show below, it does not appear to be a

particularly significant predictor of the flow of new permissions, although it has some negative impact on the actual rate of new build, other things being equal. The latter would be consistent with a view that, on average, brownfield sites are more difficult to develop. The former suggests to me that, by the 2000s there was such a strong desire and demand for brownfield development, there had been plenty of experience gained of its feasibility, and quite a lot of land of this kind was coming available as a result of industrial restructuring, that this was not in itself a great barrier to producing numbers of new permissions. Thus it does not seem to be a particularly good indicator of planning stance per se. Rather, it continues to be one of the basket of outcomes which can be monitored.

One further twist in the story regarding PDL is worth mentioning. There had been concern for some time that the emphasis on PDL might create perverse incentives to develop on amenity greenspace within urban areas, which could be significantly more adverse for the quality of residential environments than building on green fields. The definition was amended to exclude public open space. However, on assuming office in 2010 the new Coalition government introduced a further amendment, to exclude domestic gardens from the definition as well. This was headlined as an attempt to stop 'garden grabbing', a pejorative term for urban intensification in suburban residential areas. The potential for intensification of this kind in England is probably less than in the typically much lower density traditional suburbs in Australia or New Zealand.

The final three indicators in the table are mainly relevant to the issue of the longer term potential availability of land. Density was used in earlier studies as a rather crude measure of existing built up areas as a constraint. More recently the Generalised Land Use Database (GLUD), based on OS Mastermap, has become available. This measures the area of land in zones down to Census Output Area level in a range of categories including the footprints of domestic and nondomestic buildings, domestic gardens, roads, paths, railways, water bodies, etc. We use the indicator of the percentage of land which is 'greenspace', defined very broadly to include farmland and open country as well as open spaces embedded in urban areas. This appears to work as hypothesised as a positive indicator of potential land availability which has a positive impact in models for planning permissions flow or new build output. However, we recognise that there is still considerable scope for further development of more sophisticated measures of potential land availability, taking account of overlaying land use categories, characteristics and designations, location in terms of existing built up areas, physical features like altitude and slope, etc.

Table A2: Data inputs and sources for indicators of housing land supply and planning stance at Local Authority District level.

Item	Definition	Source
Completions	Number x Year x LAD by private vs social tenure	CLG Live Tables
Planning permissions flow	New planning permissions granted for housing, units x LAD, as % of households	Estimated from CLG PS2 returns and Emap-Glenigan database of major sites.
Planning permissions stock	Outstanding uncompleted permissions units x LAD, as % of households	Estimated from former DOE PS3 returns, Emap-Glenigan database, PS2 returns and CLG completions data;
RSS Housing Target	Annual number of net additions to dwelling stock 2006-26, LAD level	Obtained from published RSS documents
Five year land supply % of RSS target	Capacity of developable sites with permission or committed, phased over 1 st 5 years, divided by RSS target x 5.	DCLG Planning Statistics Live Tables
Land available % of households	100x Product of previous two items divided by households	Derived
Green Belt % of land Area	Approved Green Belt boundaries, area calculated by GIS, divided by total area of LAD	DCLG Planning Statistics Live Tables
Small sites share %	Estimated % of units with planning permission on small sites (<10), LAD level	Estimated from Emap-Glenigan database, and CLG PS2 returns data.
Average % of planning applications for major housing approved	Average over whole period to 2007, LAD level	Derived from DCLG PS2 returns, as used in Hilber study
% of applications approved last 4 years	Lagged moving average version of above measure	DCLG PS2 returns
Average decision time major housing applications	Time in weeks from application to approval	DCLG Planning applications performance statistics
Previously developed land share %	% of housing units built on PDL (brownfield) land, moving average	DCLG & OS Land Use Change Statistics (LUCS)
Net Density	Dwellings per hectare of land in residential use, ward level	Census 2001, GLUD (Generalised Land Use Database) from CLG via Neighbourhood Statistics
Sparsity	Hectares per person, LAD level	Census 2001
Greenspace	% of land area 'greenspace'	GLUD

Given the basic character of the UK planning system, with its discretionary development control system, and the view put forward in Section 2 about the most useful quantitative measures, I would argue that the best single test of these measures, individually or in combination, is how well they predict the actual flow of new planning permissions for housing. I have therefore revisited the modelling of these relationships using data for all of the above as compiled at district level for the period around 2007. I report below some key regression models emerging from this, from which I argue we can derive an index of planning stance which can be compared across different types of area. Using this kind of model we could attempt to model future supply under various assumptions about changes in the planning regime and other key drivers.

Table A2 shows the best parsimonious model for new planning permissions flow rate across LA districts in England 2007, using those variables from the wider set reviewed which appear to be significant or on the margins of statistical significance. The model also includes a small number of market and socio-economic drivers which we might also expect to influence this flow—relative house price level (prrelprice_1), unemployment and low income poverty - and also the one indicator of potential future land supply highlighted (pgreenw:greenw). Planning indicators identified in Table 1 which were tested but rejected as clearly insignificant or unusable due to multicollinearity have been discarded. (VIF statistics indicate no collinearity problem with the model in Table 2).

Table A3: Regression model for flow of new planning permissions in 2007

Variable	Coeff	Std. Error	Std	t stat	signif
	B		Coeff		
(Constant)	0.005	0.317		0.017	0.987
prrelprice_1	0.132	0.132	0.074	1.001	0.318
asunem	-0.085	0.035	-0.172	-2.471	0.014
imdlwinc	0.028	0.011	0.232	2.476	0.014
pgreenw	0.007	0.002	0.203	2.669	0.008
lpdopp_1	0.458	0.056	0.392	8.242	0.000
avsmstshare	-0.793	0.268	-0.170	-2.957	0.003
pscmp	0.773	0.471	0.074	1.640	0.102
avgrantrate	0.004	0.003	0.080	1.539	0.125
plav09	0.046	0.009	0.233	5.285	0.000
Dep Var	pppflow				
Weight	hhdwgt				
Model Summary					
Model	R	R Sq	Adj R Sq	S E Est	
1	.662a	0.439	0.424	0.500	
ANOVA					

Model		SS	Deg frdm	Mn Sq	F ratio
1	Regression	66.712	9	7.412	29.690
	Residual	85.383	342	0.250	Signif F
	Total	152.095	351		0.000

The model can explain rather less than half of the overall variation, but this is par for the course in this kind of modelling and reflects a degree of noise and lumpiness in the annual data.

The standardised coefficients (betas) and the t-statistics indicate that the strongest and most significant effects are associated with the two overlapping measures of outstanding planning permissions (ldopp_1, lagged one year) and the overall land availability derived from the five year land supply and RSS sources. The hypothesis of a negative association with small sites is confirmed. The hypothesis of a positive relationship with social completions is supported but on the margins of statistical significance. The average success rate of planning applications is found to also be positive but again on the margins of statistical significance. The rather weak performance of this measure can be explained, as discussed above, but we retain it in the model given the wider view that it is important and ought to be considered.

At an earlier stage we constructed composite planning stance indicators based on the average of the standardised values of the variables included (their Z scores). However for the final version of the planning stance indicator we weight the variables by their coefficients in this regression model.

It will be noted that the variables *discarded* from the final index include:

- Five year land supply per cent
- Green Belt land per cent
- Recent approval rate
- Average decision time
- Previously developed land

The proportion of greenspace in total land area is retained in the model but not treated as part of the planning stance composite, because planning stance is supposed to represent the policy orientation of the LA, not its objective constraints on long term land availability.

We can use a similar model to try to predict actual new private build output rates. This is not a full supply model (as used in current Gloucestershire simulation), because it omits the actual planning permissions flow which generally plays a key role in this, and some other factors such as contiguous area output levels, price changes, PDL, etc. However, it is of some relevance as a further validation of the findings on planning stance indicators. The main salient finding is that the success rate indicator is wholly insignificant in this case, while small sites and social completions have a rather stronger effect. I comment further below on the effect of social completions, in a different context (s106 etc.).

A more fully specified planning permissions flow model can be derived by including the weighted planning stance composite alongside the actual RSS target (capturing the top down influences in play in 2007) and also a measure of pro development sentiment derived from work described below, as well as the other variables in Table A2. This confirms that the planning stance composite has a strong effect as expected ($b=0.746$, $t=8.64$) but that the RSS target and development sentiment both also have significant effects.

How do these actual measures vary across England, by broad regions and types of locality. Table A3 provides an analysis comparing four measures all scaled as indices centred on 1.0. The first measure is the RSS target operative in 2007. The second shows the predicted flow of permissions excluding the effect of the RSS target variable. The third shows the actual flow, while the final measure is the composite planning stance indicator.

Table A4: Relative Index Values for RSS targets, Predicted and Actual Flows and Planning Stance Composite

Relative Index Values	RSS Target	Predicted excl RSS	Actual Flow	Planning Stance
G O Region	prsstarg	prpppflow4	pppflow	plgstance4
NORTH	0.71	1.05	0.95	1.01
YORKS & HUMBER	1.05	1.13	1.15	1.13
NORTH WEST	0.80	1.04	0.95	1.02
EAST MIDLANDS	1.09	1.21	1.12	1.09
WEST MIDLANDS	0.69	0.92	0.86	0.86
SOUTH WEST	1.30	1.11	1.21	1.07
EAST	1.18	1.00	1.02	1.03
SOUTH EAST	0.97	0.91	0.96	0.93
LONDON	1.10	0.82	0.86	0.93
Total	1.00	1.00	1.00	1.00

Rural Category	prsstarg	prpppflow4	pppflow	plgstance4
Urban	0.95	0.96	0.94	1.01
Some Rural	1.05	1.00	1.06	0.98
Quite Rural	1.06	1.11	1.08	0.99
Most Rural	1.04	1.29	1.23	1.08
Total	1.00	1.00	1.00	1.00

LA ONS typology				
SuperGroup name	prsstarg	prpppflow4	pppflow	plgstance4
Cities and Services	0.93	1.08	1.07	1.06
Coastal and Countryside	1.02	1.08	1.04	0.97
London Centre	1.23	1.21	0.93	1.18

London				
Cosmopolitan	1.39	0.96	1.09	1.24
London Suburbs	1.02	0.66	0.83	0.86
Mining and Manufacturing	0.79	1.02	0.97	0.99
Prospering UK	1.06	0.96	0.98	0.96
Total	1.00	1.00	1.00	1.00

In the two of the three northern regions and in the West Midlands RSS targets were relatively low (reflected lower demographic and economic growth). In these cases actual and predicted permissions flows are greater than the RSS numbers, and it can be seen that planning stances are more positive than average in the northern areas although not in the West Midlands. RSS targets were relatively higher in regions with more space which have tended to have higher demographic growth, including the South West, East, East Midlands and Yorkshire/Humber, and also in London, which is more of a policy aspiration than something likely to be achieved. In these cases actual and predicted permission flows are also above average, except in London. This partly reflects objective potential land availability, and partly planning stances, although planning stances in these area are not as positive as the actual flows would suggest.. The South East, which arguably the most pressured region which should be providing more housing, all indicators are below average. Here planning stances are relatively negative and constraints on land supply are perceived as strong, leading to fairly clear conflict between regional and local representatives and the aspirations of the former NHPAU.

On the urban-rural spectrum, RSS targets were somewhat above average in the more rural areas, and actual and predicted flows were higher, especially in the most rural areas which have both more potential land and more positive planning stances.

The LA typology in the final block in the table shows significant variations in the pattern between types. Major cities and service centres had below average RSS targets but above average actual and predicted flows and planning stances. Coastal and countryside area had slightly above average targets and actual and predicted flows, but somewhat negative planning stances. London central and cosmopolitan boroughs had relatively high targets but could not fully match these in actual or predicted flows, despite relatively positive planning stances. London suburbs had quite restrictive planning stances and relatively low flows, despite above average targets. Mining and manufacturing areas had low RSS targets, reflecting low economic and demographic growth, but were close to average in actual and predicted flows. Prospering UK areas had above average targets but tighter planning stances and below average performance in terms of actual or predicted flows.

This account provides some insights into the way in which planning stances interact with objective constraints and land availability and with economic conditions to produce outcomes which deviate significantly from the pattern produced by the 'top down' regional planning process.

5. Key Outcome Measures

What are the key outcome measures which should be used to assess the performance of the planning and housing supply system in England? In the light of the

analysis embodied in the Barker (2004) review of housing supply, I would argue that the following general measures would be good candidates.

- The actual rate of new house building, relative to the size of region in terms of number of households.
- The rate of increase in housing stock relative to the household growth projected in conventional trend-based household projections.
- Market affordability measured by house price to income ratios or by proportions of younger households able to afford to buy (taking account of interest rates).
- Measures of the need for affordable housing relative to the prospective supply of such housing.
- Indicators of growth in housing supply relative to growth in the economy, in terms of GDP (GVA) or employment.

It is possible to construct such measures and provide a retrospective assessment of the recent performance of the system. In the following table A4 this is done for the English regions, based on the dataset assembled for the base period of the Gloucestershire sub-regional model.

Table A5: Key Performance Indicators by Region for 2001–07 Period

Region	New Build Rate	Stock Increase/ HHld Projn	Ability to Buy 2007	Ability to Buy Change 2001-07	Net Need Afford Hsg 2007	Provision Soc Hsg 2007	Housing Supply / Job Growth 2001-07	Mix Adj Supply/ GVA Grwth
NE	0.71	0.87	48.8	-26.5	-4838	760	0.44	0.12
Y&H	0.78	0.64	44.8	-27.9	242	1448	0.65	0.31
NW	0.60	0.96	47.7	-26.4	-1152	1327	0.95	0.09
EM	0.87	0.89	47.9	-24.4	-913	1380	0.83	0.25
WM	0.75	1.21	41.4	-22.4	4599	1552	1.08	0.32
SW	0.80	0.91	34.2	-23.0	18784	1661	0.81	0.17
EE	0.88	0.49	37.3	-21.9	12784	1774	0.60	0.25
SE	0.71	0.91	31.8	-18.5	29806	2541	3.33	0.18
London	0.58	0.87	23.1	-11.7	27513	2099	1.48	0.13
England	0.77	0.83	41.1	-23.8	56351	15615	0.98	0.19

Table 4 is an illustrative mock-up of what such a performance indicator table might look like, based on readily available data. Examination of the figures suggests that this approach might need to be refined somewhat in order to be most useful, but it serves to illustrate a number of points.

The first indicator, new build rate, shows rather less variation between regions than might be expected. Higher supply tends to be in regions which combine relative

prosperity with more space and potential land availability (e.g. EM and EE regions, vs London and NW).

The second indicator compares stock increase with projected household growth. This is vulnerable to deficiencies in the trend-based household projections. For example, WM has a surprisingly high score but this may reflect a relatively depressed household growth projection in this period. A relatively favourable score for the SE reflects household growth which has been suppressed by housing scarcity.

Affordability was relatively poor across England in 2007, and had deteriorated a lot since 2001. The deterioration appears less in absolute percentage point terms in London and SE, but this is from a lower base position.

The net need for affordable housing takes account of a proportion of backlog needs, new household formation times the unaffordability rate for market renting, and the supply of social sector re-lets. This shows a sharp difference between the southern regions with high net needs and northern regions with overall surpluses at regional level. In 2007 new social rented completions were still relatively low, even in the most pressured regions, although they have subsequently increased significantly.

The last two indicators attempt to compare housing stock increases with economic growth measures. The first compares numerical stock increase with job growth. The figure for SE appears anomalous, because of very low job growth in this particular period (possibly job growth was suppressed by housing shortage). The second measure compares a mix-adjusted stock increase with real GVA growth. This shows more favourable performance in Y&H and WM, and less favourable in NW and London. While I believe such comparisons should be useful, the measures probably need to be refined in terms of time periods or scaling.

6. Estimating the Impact of Planning on Key Outcomes

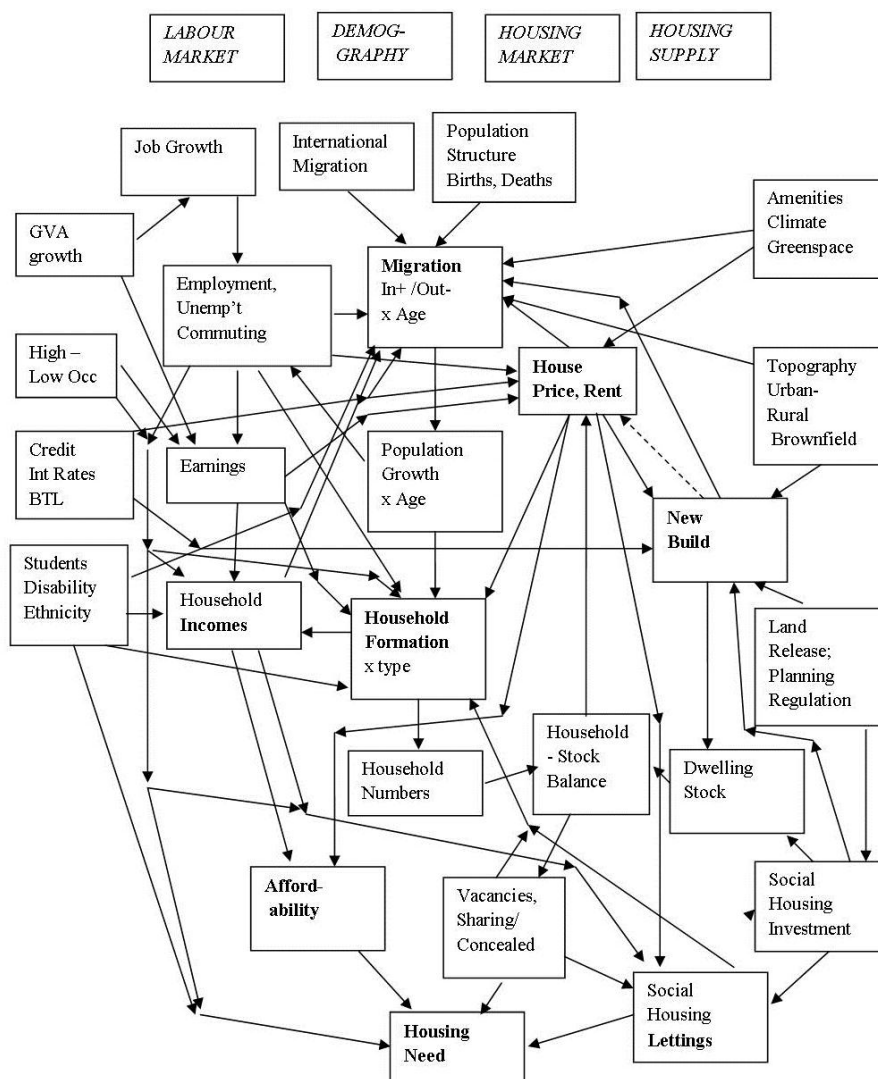
I regard this aspect of the process of assessing performance of planning as the most challenging analytically. The challenge lies in developing realistic, robust models which can quantify the relationships between planning inputs and housing market outcomes and so solve the two problems of (a) attributing effects on outcomes to planning versus other causes (e.g. economic and demographic factors), and (b) forecasting future outcomes conditional on assumed policies and background conditions. The skills and knowledge entailed in meeting this challenge go beyond those available to planning staff in local authorities.

Several economic models of the housing market in England have been developed over recent years. These include the official DCLG 'Affordability Model' developed by Geoff Meen and colleagues at Reading and other Universities; past models developed by myself and Chris Leishman (e.g. Bramley & Leishman 2005); models developed by Paul Cheshire and Steve Sheppard (refs); and a recent study by Hilber and Vermeulen for NHPAU. All of these in some degree go beyond traditional national and regional house price models, which tend not to address supply and planning at all. However, all have limitations, which I do not attempt to review in detail here. The official 'Reading' model provides authoritative estimates of relationships between supply and affordability at regional level, but treats supply as a black box, with no explicit linkage to the actual mechanisms of planning.

The most useful model I have available which can begin to meet this challenge is the sub-regional economic model which I have developed for Gloucestershire recently,

building on earlier feasibility study for NHPAU. It is beyond the scope of this note to provide a detailed account of this model but I can provide some illustrative insights into what it does and how the impacts of planning changes can be tracked. The following figure provides an outline schematic picture of the model. The model can be viewed as having four broad streams (vertical segments in the diagram), concerned with the labour market, population/household demographics, the housing market (prices, rents), and new housing supply. Exogenous inputs are shown around the outside of the diagram; these are either assumed future values and trends or policy controlled inputs. The key outcomes forecast focus on affordability and housing need but along the way we predict new build rates, house prices and rents, migration, household formation and growth, and several labour market indicators which feed into incomes. In this version of the model the labour market is treated more simply than was considered in the feasibility study.

Figure A1: Schematic representation of sub-regional housing market simulation model



This model runs for a set of 102 'Housing Market Areas' which are groups of local authorities, with most of the data built up from the LA level. The following map shows the HMAs, Gloucestershire being highlighted with a dark solid boundary.

Figure A2: GVA growth 1997–2007 by HMA

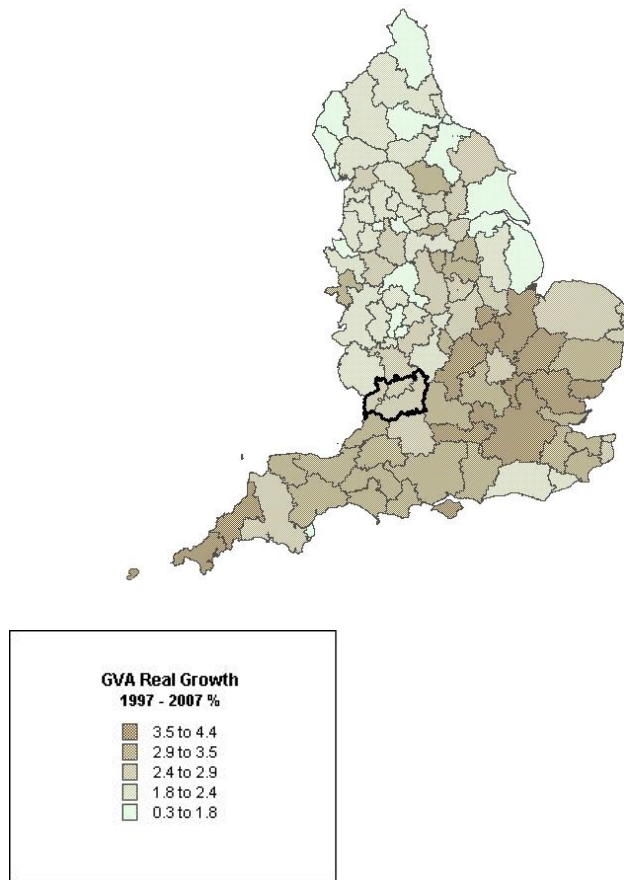


Table A5 illustrates the kinds of outputs produced by this model, in this case taking two adjacent sub-regional groupings of areas and assuming they increase their supply of new planning permissions for housing by one-third. The impacts of this are tracked over 20 years. The main features of the results shown are (a) that the impact of planning consents on supply is considerably less than 'one for one'; (b) additional supply has some effect in steering net migration to the area and in increasing household formation; (c) additional supply would have a moderate effect on house prices and affordability, but this would take quite a long time to be felt; (d) this would also impact favourably on aspects of housing need including through increasing the supply of social sector lettings.

The intention of this model is to provide a stronger information base to local authorities and sub-regional partnerships in arriving at their planning decisions. This should strengthen their position when arguing to Planning Inspectors that their plans are soundly based.

Table A6: Case study of impact of supply increase impacts for sub-regional grouping

		2011	2016	2021	2031
Planning Perm's	Bristol-WoE	15.4%	32.3%	32.3%	32.3%
	Glo'shire	15.4%	32.3%	32.3%	32.3%
New Build Completions	Bristol-WoE	0.0%	5.9%	12.1%	14.0%
	Glo'shire	0.0%	5.3%	10.5%	10.9%
In-migration	Bristol-WoE	0.0%	0.4%	1.4%	3.9%
	Glo'shire	0.0%	0.3%	1.0%	2.8%
Out-migration	Bristol-WoE	0.0%	0.4%	1.1%	1.3%
	Glo'shire	0.0%	0.5%	1.1%	1.4%
Headship Aged 25-59	Bristol-WoE	0.0%	0.0%	0.3%	0.4%
	Glo'shire	0.0%	0.0%	0.2%	0.2%
Household Growth	Bristol-WoE	0.0%	1.3%	5.8%	14.5%
	Glo'shire	0.0%	0.3%	5.3%	9.1%
Unemployment	Bristol-WoE	0.0%	0.1%	0.8%	0.0%
	Glo'shire	0.0%	0.0%	0.1%	2.4%
Commuting (outward)	Bristol-WoE	0.0%	0.1%	1.0%	12.7%
	Glo'shire	0.0%	0.0%	0.2%	2.8%
Households/dwellings	Bristol-WoE	0.0%	-0.1%	-0.4%	-0.5%
	Glo'shire	0.0%	-0.2%	-0.5%	-0.6%
Relative House Price	Bristol-WoE	0.0%	-0.5%	-2.2%	-4.2%
	Glo'shire	0.0%	-0.4%	-2.1%	-4.4%
Social Lettings	Bristol-WoE	0.0%	0.5%	5.7%	20.1%
	Glo'shire	0.0%	-0.1%	2.4%	7.2%
Affordability	Bristol-WoE	0.0%	0.7%	-0.5%	4.8%
	Glo'shire	0.0%	0.4%	2.2%	4.3%

7. The Post-2010 Reforms to Planning in England

Since May 2010 Britain has had a new Conservative-Liberal Democrat Coalition Government, and this is bringing about a radical change in the approach to planning policy in England. This new approach was foreshadowed in the Conservatives (2010) policy Green Paper, entitled *Open Source Planning*, although some of the ideas and preferences are shared with the other coalition party. This document made some pretty sweeping claims, for example that the current planning system achieves none of its fundamental goals, is 'broken', and that centralised 'bureaucratic' planning is the source of local resistance to development. The proposed 'reboot' of the system was intended to place decision-making firmly at the local and neighbourhood levels.

For housing, this meant the rejection of 'top-down targets' for housing numbers and the complete dismantling of Regional Planning bodies, scrapping of Regional Spatial Strategies, scrapping or curtailing of Regional Development Agencies, scrapping of a number of 'Quangos' including NHPAU⁴, and withdrawal of some elements of existing national planning policy guidance including the minimum density guidelines and the alleged incentive to 'garden grabbing' implicit in previous definitions of 'brownfield' land.

There is comprehensive Decentralisation Bill to give effect to the broader philosophy of the new regime, including the possibility of local community level plans. There is now a specific incentive mechanism to encourage new housing, involving giving LA's the revenue equivalent to seven years of Council Tax on new dwellings, although this will have to be financed by a general top slice on central government grants to local authorities. Existing arrangements for developer contributions to infrastructure costs and affordable housing through 'Section 106' planning agreements and a 'Community Infrastructure Levy' will continue. The 2010 Comprehensive Spending Review made a sharp reduction in grants for new social housing and regeneration, so the scope for publicly-led housing supply will be reduced.

The new draft National Planning Policy introduces a 'presumption in favour of sustainable development' which is open to interpretation but may be used to pressure local authorities to put local plans ('core strategies') in place with sound evidential support, if they are to retain control over development in their areas. Without such plans in place, local authorities would be vulnerable to developer applications and appeals referring to this new presumption. This is allied to a pro-growth thrust towards 'deregulation' which may be particularly significant in relation to business development (H M Treasury & DBIS 2011).

8. Predicting Local Sentiment and Potential Changes in Planning Stance

In future this regime implies that local plan policy targets and development control decisions will be determined primarily at the local level, rather than as a local mapping down of regionally determined targets. This would seem to suggest that the general planning stance and the pattern of local targets and decisions will be determined more by local sentiment towards housing development. Therefore, to understand and to predict local planning inputs to housing supply under this new regime, it would appear to be necessary to try to predict local sentiment.

⁴ The National Housing and Planning Advice Unit was set up in 2007 following the Barker (2004) review of housing supply, with a mission to improve the evidence base to support planning for affordability in the housing market.

In a separate paper provided I outline and report on an approach to predicting local sentiment and likely support for or opposition to new housing development across England. This utilises new data from the British Social Attitudes Survey 2010 which includes a suite of new questions on attitudes to new housing development in the local area and the conditions (e.g. different kinds of planning gain) under which people might be induced to support development. Predictive models on the micro data are then applied to local authority level using matched socio-demographic data and General Election voting data to capture political affiliation.

These predicted levels of support for or opposition to development are then compared with the existing planning stance indices developed as described above. From this a relatively simple classification can be derived, distinguishing authorities likely to leave their existing stance and targets unchanged, from those likely to use to their new-found freedom to either increase or reduce supply. The results of this exercise are shown in Table A6 below.

On the assumptions employed, more than a quarter of local authorities (95) would reduce supply, while about half that number (44) would increase supply. The reductions are predominant in the southern regions outside London, while increases would somewhat outnumber reductions in four northern and midland regions. Increases are more common in the most rural areas, while reductions would outnumber increases by three-to-one in 'prospering' areas. The separate paper goes on to argue that these patterns are basically unhelpful and even perverse in the sense of reducing supply in the more pressured areas where affordability is already worse, and in being inversely correlated with economic growth potential.

Table A7: Predicted Change in Planning Stance towards New Housing by Region and Type of Locality (number of LA districts in England)

Area Category	Unclassified	No change Low	Change to Low	Change to High	No Change High	Total
NORTH	0	3	3	6	11	23
YORKS & HUMBER	3	3	6	1	8	21
NORTH WEST	0	15	10	11	7	43
EAST MIDLANDS	1	6	2	8	23	40
WEST MIDLANDS	0	15	3	10	6	34
SOUTH WEST	1	19	13	1	11	45
EAST	0	19	20	2	7	48
SOUTH EAST	1	36	29	0	1	67
LONDON	1	14	9	5	4	33
Total	7	130	95	44	78	354
Urban	0	55	45	13	21	134
Some Rural	3	48	31	8	25	115
Quite Rural	2	27	19	20	29	97
Most Rural	2	0	0	3	3	8

Unclassified	2	0	0	0	0	2
Cities and Services	1	13	9	10	16	49
Coastal and Countryside	2	15	9	6	12	44
London Centre	0	0	0	4	3	7
London Cosmopolitan	0	1	6	0	0	7
London Suburbs	0	7	5	0	0	12
Mining and Manufact	0	17	16	8	13	54
Prospering UK	2	77	50	16	34	179
Total	7	130	95	44	78	354

9. The Impact of Planning Obligations (s106) on Outputs and Outcomes.

This question strays somewhat into the territory of a separate AHURI project which we are also engaged in. The basic argument is that part of the regulatory impact or burden of planning is increasingly related to the obligations which are placed on developers, through Section 106 agreements or the broader Community Infrastructure Levy (CIL). The most common and onerous type of s.106 obligation in recent years in England has been for the provision of affordable housing, under England's version of the thrust for inclusionary housing approaches within planning which are being developed in many countries (see Mallach & Calviati 2011, especially chapter by Monk).

The general presumption in England is that the burden of planning obligations including s106 affordable housing requirements falls primarily on the landowner rather than the developer or the consumer of new housing. This is a different presumption from that which might habitually be made in Australia. Planning obligations are a hypothecated quasi-tax on development values; we would see these as a tax on economic rent and therefore not, in the generality of cases, likely to impact much on supply. This of course assumes that residual land values (without s106) would be large positive values, particularly in areas where these obligations are strongly required (e.g. south of England). Circumstances where this logic breaks down include places and time periods when market prices for housing are moderate and residual land values are not very high or even negative; or some previously developed land where there are existing use rights with significant positive value and where alternative use developments would not be subject to the same obligations.

Additional contrary arguments or cases where s106 obligations could impact negatively on supply include transitional periods when such a regime is introduced, where developers may already have bought land at higher values assuming no obligations. In addition, it can be argued that the negotiation process around s106 is simply slowing the processing of applications significantly. And some developers would still take the view that having affordable (especially social) housing on their sites would reduce sales values and the ease of selling market units.

It is quite difficult to test the impact of these obligations on supply and prices within econometric models, without having access to comprehensive and consistent data on

the extent of planning obligations and their financial characteristics⁵. There are data on s106 numbers for a few recent years in the HSSA returns from local authorities (and similar data for Scotland), but these data alone do not fully specify the financial burden. For example, most s106 sites until recently also attracted Social Housing Grant, so that the amount of subsidy being extracted from the land value was actually quite modest. In the future, with such subsidy being very scarce, the system will have to be worked harder.

A cruder approach to this issue is simply to look at the impact of new social housing output on the rate of new private house building completions in the context of econometric models for supply, as for example in the Gloucestershire model. I have to report that in all such tests undertaken on recent English data, the social housing completions variable has a significant *positive* impact on the rate of new private housebuilding. This is clearly at variance with the assumption of many critics of s106 that it is bound to slow down and reduce private housing supply, because of the kinds of arguments advanced in the last paragraph but one.

I would interpret this finding in the following way. Firstly, as we have shown, a willingness to build social housing is indicative of a positive planning stance towards new housing provision generally. Secondly, although s.106 has not become the universal route to social housing provision, it has become very widespread and in some years a majority route to social provision. With such policies in place, there is a general presumption that to get some private housing built you also have to build some social housing (or provide land or cash contribution towards it). Thirdly, in areas where s106 is heavily used, land values tend to be very high, so the basic economic logic suggests that there should not be a big negative effect on supply. Fourthly, in this period s.106 was very often combined with injections of social housing grant, so one could argue that the social housing was often cross-subsidising the private output rather than the other way around.

Because of the second reason just given, you could argue that this evidence is not a definitive test of the proposition that s.106 does or does not hamper private housing supply, even though the other reasons would imply that there is no hampering. One might still want to argue that the existence of s106 as a regime may hamper supply, against a counterfactual of a regime where no s106 operated. So perhaps the jury is still out on this one, although I personally feel that the evidence is quite supportive of the system. Certainly one can still argue that s106 should be applied in a smart way, with clarity of expectations, viability testing, reasonable requirements, and rapid administrative processing.

10. Developing Further Measures

I think that in the English context there is scope for developing further measures of planning stance and constraints, and of physical and environmental constraints on the potential availability of land for housing development. Some of these measures might have analogues with measures already developed or considered in Australia. Several of these measures would entail the use of GIS databases and analytical techniques.

In view of the importance assigned since 1990s to Local Plans/LDFs under the so-called 'plan-led system', and especially in the light of the additional importance attached to having plans in place with the 'presumption in favour of sustainable

⁵ The University of Sheffield may have such data, by combining HCA programme information on grant with s.106 planning numbers; but probably only for a small number of recent years.

development', one would think that information about the status of LDFs, and particularly core strategies, would be crucial. There is some monitoring of this by DCLG and also by other commercial organisations. However, this does focus on a procedural matter and does not of itself define even the direction let alone the magnitude of the policy embodied in the plan. It is certainly desirable to record and monitor the housing target number (or 'trajectory') expressed as an annual number. But what does it mean if there is no up-to-date LDF agreed? On the one hand, this may mean less dwellings built because there are less allocated sites to draw on and because LA;s may be reluctant to determine major applications in a way which would pre-empt the planning process. On the other hand, with the new 'Presumption' this may mean lots of speculative new applications, some of which will get through.

One data source which could be more fully explored and exploited is the LUCS. There has been surprisingly little use of this except as the source for the PDL (brownfield housing) indicator and its use as the denominator for new housing density. LUCS is probably most useful when combined with (overlaid on) other 'GIS Layers' such as Urban/Built Up Areas, Green Belt, AONB, National Park, or other designations, and of course land use stock data from OS Mastermap (known as GLUD). However, most of the indicators which might be derived from LUCS might be better regarded as output or outcome measures.

As part of the major thrust to promote brownfield development in the late 1990s and early 2000s, there was considerable investment in urban capacity studies. In theory, these should provide a basis for predicting potential further development rates on PDL, including the rate at which 'windfall' sites might come up for change of use and the extent to which intensification of low density suburbs might take place. Unfortunately to my knowledge the DCLG made no attempt to apply a common methodology or metric to these studies and no attempt to compile the results on a common database. A further negative observation on this episode was that local activity on urban capacity studies displaced previous activity in maintaining a housing land availability database and annual review. This contributed to the disastrous reduction in land supply in the period leading up to the Barker review.

Housing land availability studies had to be subsequently reinvented, under the label SHLAA (Strategic Housing Land Availability Assessment). Most LA's have completed at least one SHLAA exercise since then, although it is not clear what is expected or normal practice in terms of updating. The SHLAA exercise tended to involve a systematic review of potential sites including a canvass for suggested sites, which could be used as an opportunity for developers or owners to suggest unallocated sites not previously considered. There would then be a technical sift to identify sites which could be acceptable in planning and policy terms and to identify possible constraints which might prevent development within an earlier timeframe (five years). The SHLAA cycle effectively led to quite a large increase in the amount of land recognised in the planning system as potentially available for housing, and some of this was then converted into actually available sites, with permission or a definite 'allocation' or 'commitment' status. It is unlikely that SHLAA exercises will be repeated very frequently on the comprehensive basis just described. Therefore, this boost to supply may prove to be a one-off blip in the time series, but as a cross-sectional indicator of potential supply it could have a moderate shelf life.

Data from SHLAA should carry over into the Annual Monitoring Report (AMR). These documents are officially published, and there is indeed some guidance on the form of AMRs (as described in the interim report of the project). Despite this, our experience

from trying to construct a dataset from examination of 'published' AMRs and SHLAAs was that this was a nightmare. 'Publication' means a set of pdf documents constructed to a non-standard format, reflecting sifting and categorisation of sites which varies markedly between authorities. Again, so far as we are aware the DCLG did not make a systematic collection of data held centrally on numbers derived from these key systems⁶.

GLUD data were introduced in an earlier section; these provide quite a significant addition to the data available now in England compared with a decade ago. We are already using the proportion of 'greenspace' but other land use categories of potential interest include vacant open land, domestic gardens, land ancillary to nondomestic buildings. One could envisage a composite indicator whereby each land use category was weighted by the perceived likelihood of its being made available for housing development. 'Water' would be a category obviously with a very low likelihood.

The ability to highlight land with a greater likelihood of being deemed suitable for development would undoubtedly be enhanced by overlaying other designations or characteristics variables. Obvious examples included restrictive environmental designations such as SSSI's and RAMSAR sites. An example of characteristics variable overlay would be an indicator of 'bushiness' which we have been experimenting with based on more detailed subcategories of greenspace within GLUD (grassland/scrub/forested) combined with a separate database on trees. Slope and altitude of land are widely recognised as potential constraints on house building, perhaps more in other countries which display more extreme variation than in UK (e.g. Switzerland). Measures of this kind were used in the Hilber and Vermeulen study. Another aspect of suitability which has received a great deal of extra attention in the last five years or so is flood risk, following a series of costly flood events in England. We are in the process of acquiring a geo-coded flood risk indicator, based on flood models, which we could include in an enhanced set of indicators or in composite measure.

Another approach to assessing suitability for housing is to take account of location and accessibility/connectivity to existing urban areas and service/employment centres. One could posit thresholds and create buffer zones based on these existing features using the existing transport network, and overlay these on the other layers discussed above. Or one could posit a continuous decreasing function of distance/time, so that the weighted likelihood function was continuously decreasing as you move further away. These approaches tend to embody the conventional normative assumptions of the urban sustainability movement. A more market based approach would be to base it on a hedonic house price model. In general, hedonic models tend nowadays to display a relatively shallow distance decay, which in some city regions appears to be positive.

The 'proof of the pudding' with all of these hypothesised features of land or location which affect its 'potential' use for housing development is whether systematic relationships can be found across large sets of data between certain features and greater or lesser propensity for housing to be built. In principle, having created a set of measures as sketched out above, one could then attempt to calibrate a composite

⁶ Part of the explanation, or excuse, for DCLG not collecting data such as from AMRs, SHLAAs or Urban Capacity is that, prior to 2010, they relied a lot on Government Regional Offices to mediate relations with the LA's. Regional staff may well have compiled simple datasets for their areas, as well as relying on their 'local knowledge'. With the abolition of regional planning and regional agencies the GO's were abolished also, so presumably such data as they compiled was lost.

'suitability/probability' function by the time-honoured fashion of running a regression. The dependent variable could be either parcels of land developed for housing (extracted from LUCS) in a micro approach, or numbers of housing units built and sold (Land Register) or let (CORE) for small area units such as Super Output Areas.

11 Implications for Australia and New Zealand.

On the whole I think this section cannot be developed very much until we have had a fuller exchange of information and insights into our respective systems and datasets.

While one can envisage that there may be considerable parallels between measures used or proposed in England and those which might be used in Australia or New Zealand, at the same time we must recognise the markedly different basis for the planning system in these latter cases. Australia has something closer to a US-style zoning system and does not have an English-style discretionary Development Control system. Instead of having a relative small but focussed pool of land which is actively in the development pipeline, you have large swathes of land which are zoned and in some cases have been subdivided, and which have a presumption in favour of development, but which have not been built out. However, in some areas the real issue may be about re-zoning, at potentially higher density, and here local discretionary decision making comes into its own. Another key issue is infrastructure availability, funding and timing. Here the existence of urban development programs may be a key source for clarifying which land is realistically likely to be built in a given time period.

Appendix 8: Note on Data Collection and Planning System Performance Monitoring in the UK (November 2011)

The following are examples of data collection and planning system performance monitoring at the national level:

Department of Communities and Local Government (DCLG) - Live Tables

Data collected by DCLG is published on the Department's website in 'live' excel tables and is updated on a rolling basis as new data becomes available. The tables, which are intended to support evidence based policy development and monitoring, cover the following areas:

- Housing stock;
- House building;
- Housing renewal (including Disabled Facilities Grant);
- Households projections;
- Housing markets and house prices;
- Rents, lettings and tenancies;
- Homelessness;
- Household characteristics;
- Housing finance;
- Affordable housing supply;
- Repossessions and repossession prevention.

See:

<http://www.communities.gov.uk/housing/housingresearch/housingstatistics/livetables/>

Land Registry

Her Majesty's Land registry, a non-ministerial government department, records land dealings including sales and mortgage. Land Registry's *House Price Index*, which is updated monthly, (see <http://www.landreg.gov.uk/house-prices>) reports average house prices across the UK and by region and council area. The House price Index also contains information on sales volumes and average prices by house type.

See Land Registry *House Price Index: June 2010*
http://www.landreg.gov.uk/upload/documents/HPI_Report_Jun_11_bs2tv5.pdf

Valuation Office Agency's (VOA) Property Market Report

The VOA is an executive agency of HM Revenue and Customs. DVS, the commercial arm of the VOA, publishes *Property Market Report*, an annual publication that provides mean prices and price ranges for agricultural, residential and Industrial land in England, Scotland and Wales. Local area data is provided for select locations in each region.

See <http://www.voa.gov.uk/dvs/propertyMarketReport/pmrJan2011.html>

Royal Chartered Institute of Surveyors - Build Cost Information Service (BCIS)

BCIS collects, analyses and publishes information on build costs. BCIS online (a subscription service) contains data on build costs (mean, median and range) for different building types, construction methods, construction materials and building height. Data is available at the local authority area level.

See <http://www.bcis.co.uk/site/index.aspx>

National Indicator Set (NIS)

The NIS was a set of indicators used by central government to performance manage local government between April 2008 to March 2011. The NIS was developed

following the 2007 government spending review, replacing Best Value Performance Indicators. The NIS covered services delivered by local authorities, including planning. Examples of indicators included:

NI 154: Net additional homes

NI 155: Number of affordable homes delivered (gross)

NI 156: Number of households living in temporary accommodation

NI 157: Processing of applications

NI 158: Percentage of non-decent council homes

NI 159: Supply of ready to develop housing sites

Performance against indicators was published annually by the Audit Commission until May 2010. DCLG stopped all National Indicator (NI) associated data collection on March 31st 2011. However, some of the data gathered through NIS will continue to be collected through the single data list for local government (detailed below).

The Department of Communities and Local Government - Information Strategy:

DCLG's business plan for 2011-2015 summarises the datasets that the Department will consult when making key policy decisions. The table below shows a selection of this data:

Table A8: Select key data identified in DCLG Business Plan 2011-2015

Data	Description
House Building Statistics	New build housing starts and completions (source: local authorities)
Affordable Housing Supply	(source: Homes and Communities Agency data and local authorities)
Housing Stock	Net supply of housing / dwelling stock estimates (source: local authorities)
Financial Services Authority mortgage market statistics	Statistics on mortgage lending activity (source: regulated mortgage lenders and administrators)
Environmental Performance of Buildings	Data on newly constructed homes meeting Code for Sustainable Homes standards and energy efficiency (SAP) ratings. (source: service providers)
Housing Market and House Prices	Mix adjusted house prices (also mortgages, property transactions and land prices). (source: Council of Mortgage Lenders)
Planning Application Statistics	Data on applications received and outcomes (source: local authorities)

Five Year Land Supply for Housing	Based on reported assessments of five year land supply by local authorities in England.
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See: DCLG Information Strategy—list of datasets used for key policy decisions (May 2011) <http://www.communities.gov.uk/publications/corporate/businessplan2011>

This data will be used by central government to report on a number of impact and input indicators that will assist in evaluating policies and reforms and be used in reporting. Impact indicators listed in DCLG's business plan include (but are not limited to):

- housing starts and completions
- net additions to housing stock
- affordable housing starts and completions
- energy efficiency of new housing
- number of households in temporary accommodation
- number of planning permissions granted as a percentage of major and minor applications received.

Input indicators include (but are not limited to):

- Affordable rent payment per dwelling by the Homes and Communities Agency.
- Average new homes bonus grant per dwelling per year, by class of authority.

See: Department for Communities and Local Government Business Plan 2011-2015 (May 2011) <http://www.number10.gov.uk/wp-content/uploads/CLG-Business-Plan1.pdf>

Welsh Performance Indicators

In 2000/01 Welsh local planning authorities agreed a set of Wales-specific performance indicators which local authorities in Wales have a legal duty to collect data and report on. Examples of performance indicators include:

PLA/003

The percentage of appeals determined that upheld the authority's decision in relation to planning application decisions and enforcement notices

PLA/004

- a) The percentage of major planning applications determined during the year within 13 weeks
- b) The percentage of minor planning applications determined during the year within 8 weeks
- c) The percentage of householder planning applications determined during the year within 8 weeks
- d) The percentage of all other planning applications determined during the year within 8 weeks
- e) The percentage of all applications subject to Environmental Impact Assessment (EIA) determined within 16 weeks

PLA/006

Number of additional affordable housing units provided during the year as a percentage of all additional housing units provided during the year (National Strategic Indicator)

PLA/007

The number of additional housing units provided during the year on previously developed land as a percentage of all additional housing units provided during the year

See: Local Government Data Unit Wales *National Performance Indicator Guidance for Wales 2010-11* vers. 3. <http://www.dataunitwales.gov.uk/Publication.asp?id=SX3ED1-A77FF955>

21 day reports

The 21 day duty was enacted via an amendment to the Town and Country Planning (General Development Procedure) Order 1995 (GDPO) (now consolidated into the Development Management Procedure Order 2010). It requires that all statutory consultees listed in section 54 of the Planning and Compulsory Purchase Act 2004, respond to local authority consultations on planning applications and pre-development queries from developers within 21 days of receipt of information in writing. Statutory consultees must report annually on their performance against the duty. Their reports must include measures to maintain and improve future performance.

See, as example, Environment Agency's *2010-11 Annual Report to the Department of Communities and Local Government: The Environment Agency's timeliness on responses to planning consultations in England*. http://www.environment-agency.gov.uk/static/documents/110628_21_day_report_final_V2.pdf

Examples of data collection and planning system performance monitoring at the local level:

The single data list:

The single data list, which was published in April 2011, is a catalogue of the minimum data which local governments will be required to submit to central government each year. Below are examples of the data returns that will be required from local authorities from 2012:

- House Building Returns.
- Housing Strategy Statistical Appendix (under review) (see explanation below).
- Annual Monitoring Report (under review) (see explanation below).
- Developments in flood risk areas.
- Housing benefit and Council Tax benefit subsidy estimates and claims.
- CORE (Continuous Recording) of lettings by local authorities.

See:

<http://www.communities.gov.uk/localgovernment/decentralisation/tacklingburdens/singledatalist/>

The Housing Strategy Statistical Appendix (HSSA)

The HSSA, which is a summary of data collected by local authorities and returned to DCLG, includes local information on housing stock, housing needs, delivery of new housing and how affordable housing is being funded.

A copy of the 2010-11 HSSA form can be viewed at

<http://www.communities.gov.uk/publications/housing/hssaguide201011?view=Standard>

Annual Monitoring Reports:

Annual Monitoring Reports (AMRs) are published by UK local authorities annually to monitor planning policy outcomes. The content requirements for AMRs are also set out in Planning Policy Statement 12: Local Spatial Planning (2008).

Core Output Indicators are key statistics based on set formula that local authorities can include in their AMRs. Examples include:

- H2(a): net additional dwellings in previous years
- H2(B): net additional dwellings—for the reporting year
- H3: new and converted dwellings on previously developed land
- H5: gross affordable housing completions
- E1: Number of planning permissions granted contrary to Environmental Agency advice on flooding or water quality grounds.

Strategic Housing Land Availability Assessments (SHLAA)

SHLAAs are an assessment of the potential land available in a local authority area for future housing development (15 year scope). Local governments are required under Planning Policy Statement 3 to undertake SHLAAs in order to:

- Identify deliverable sites (ready for development) for the first 5 years of the plan period
- Identify developable sites for the next 6-10 years
- Identify developable sites for the next 11-15 years or, if not possible, indicate broad locations for future growth
- Not include an allowance for windfall sites in the calculation of land supply for the first 10 year period, unless local circumstances prevent specific sites from being identified. (from PPS3).

Outputs of a SHLAA, as outlined in PPS3, are as follows:

- A list of sites (including location and characteristics)
- Assessment of the deliverability / development potential of each site (i.e. is it likely to come forward for residential development?)
- Quantity of housing that could potentially be delivered on each site
- Constraints to deliver e.g. Low net developable area
- Recommendations on how to overcome constraints.

See DCLG. (2007). *Strategic Housing Land Availability Assessments: Practice Guidance*, London: DCLG.
<http://www.communities.gov.uk/publications/planningandbuilding/landavailabilityassessment>

Strategic Housing Market Assessments (SHMA)

SHMAs, which are also undertaken at the local government level, generate information on housing demand and need, including the following:

- Estimates of current dwelling stock (incl. Size, type, tenure and condition)
- Analysis of past and present housing market trends, including supply / demand and price / affordability

- Estimates of future households
- Estimates of the number of households currently in housing need
- Estimates of the future affordable housing needs
- The type of affordable housing that will be required (e.g. flats for single person households or family homes)
- Estimates of the number of households that will require market housing
- Household groups that may have particular housing requirements (e.g. families, disabled people, key workers).

See DCLG. (2007). *Strategic Housing Market Assessment: Practice Guidance*, London: DCLG

<http://www.communities.gov.uk/publications/planningandbuilding/strategichousingmarket>

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