



## When Tourists Move In: How Should Urban Planners Respond to Airbnb?

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# When Tourists Move In

## How Should Urban Planners Respond to Airbnb?

Nicole Gurran and Peter Phibbs

### Problem, research strategy, and findings:

The online accommodation platform Airbnb has expanded globally, raising substantial planning and regulatory concerns. We ask whether Airbnb rentals generate significant neighborhood impacts like noise, congestion, and competition for parking; reduce the permanent rental housing supply and increase rental prices; or provide income opportunities that help “hosts” afford their own housing. We focus on Sydney, the largest region in Australia with 4.4 million people in 28 individual municipalities, which has experienced both rapidly rising housing costs and exponential growth in Airbnb listings since 2011. Airbnb’s growth has raised concerns serious enough to result in a formal Parliamentary Inquiry by the state of New South Wales. We analyze stakeholder submissions to this inquiry and review local planning regulations, Airbnb listings data, and housing market and census statistics. We find that online homesharing platforms for visitor accommodations blur traditional boundaries between residential and tourist areas so Airbnb listings may fall outside of existing land use regulations or evade detection until neighbors complain. Our findings are constrained by the difficulties of monitoring online operations and the rapid changes in the industry.

**Takeaway for practice:** Planners and policymakers in cities with increasing numbers of Airbnb rentals need to review how well local planning controls manage the neighborhood nuisances, traffic, and parking problems that may be associated with them while acting to protect the permanent rental housing supply. Local planners need to ensure that zoning and residential development controls distinguish between different forms of short-term Airbnb accommodation listings and their potential impacts on neighborhoods and housing markets.

**Keywords:** Airbnb, land use planning, housing supply, housing affordability

Housing affordability pressures afflict the world’s major cities, while spare capacity within existing dwellings lies untapped. Proponents of the burgeoning “share economy” claim the movement can address both of these problems by releasing latent space within existing buildings through services such as Airbnb, an online platform allowing residents to raise income by offering their homes as short-term rental accommodations (Shareable and Sustainable Economies Law Center, 2013). Airbnb invites tourists to “live like a local,” implying that guests impose no additional burdens on neighbors and communities while bringing new income to local hosts and businesses (Khadem, 2016; Morris, 2016). Critics, however, argue that Airbnb has enabled tourism accommodations to penetrate residential neighborhoods, which creates conflicts between visitors and residents, displacing permanent accommodations in high-demand cities and exacerbating affordability pressures for low-income groups (Brousseau, Metcalf, & Yu, 2015; New York State Attorney General, 2014). Online holiday rental platforms such as Airbnb raise important questions for urban policymakers and planners about how effective existing planning controls on tourist and residential accommodations are and the extent to which increasing tourism demand puts pressure on the local housing market. Yet there is little academic research on the rise of Airbnb and its implications for urban policy and planning.

In this study, we begin to address this gap, focusing on Sydney, Australia, the largest city and region in the country, covering 4,775 square miles and housing more than 4.5 million people in 2011 in 28 individual municipalities. Housing prices have been increasing rapidly in the region: The median housing price in Sydney recently reached AUD\$900,000 (US\$684,000; Australian Bureau of Statistics [ABS], 2015). Airbnb listings in Sydney have also grown rapidly since spreading to Australia in 2011, more than doubling each year to 15,648 properties in January 2016. Airbnb listings now extend well beyond the traditional tourist destinations of Sydney’s inner and beachside areas. We

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ask whether the rise of tourism in residential areas, facilitated by online platforms such as Airbnb, generates negative neighborhood impacts that require a new land use planning response. We also consider the potential impacts of Airbnb rentals on permanent housing supply and affordability, asking whether Airbnb is creating pressure on Sydney's permanent rental housing supply or, conversely, offsetting housing affordability pressures for "hosts" who rent rooms or beds to tourists.

Our sources include written submissions to a New South Wales (NSW) Inquiry on short-term holiday rentals (Parliament of NSW, 2015); a review of Sydney's land use planning regulations that apply to visitor accommodations; listing data from the independent source InsideAirbnb.com; and statistics on rental vacancy rates, monthly mortgages, and rents. We apply our analysis to greater Sydney overall and a subset of five municipalities in the Sydney metropolitan area to examine potential differences in Airbnb listings and revenue across the metropolitan region. Our empirical findings relate only to the Sydney region, but we believe they are likely to resonate in other cities affected by the global expansion of Airbnb listings.

We first summarize the brief scholarly literature on Airbnb and its potential impacts on local communities, then explain our study approach and data sources in more detail. Next, we discuss the growth of Airbnb in Sydney and question Airbnb's impact on residential neighborhoods, effect on the permanent housing supply, and whether hosts gain sufficient income to offset their own affordability problems.

We find that local land use planning frameworks are not equipped to regulate the new forms of visitor accommodations enabled by the Airbnb platform or the potential conflicts arising from increasing numbers of tourists staying in Sydney's residential areas. Not all forms of online homesharing have created serious impacts since 2011; converting whole houses or apartments into short-term visitor accommodations may most disturb residential communities and reduce permanent rental housing, absorbing 7% of stock in one Sydney municipality. The opportunity to raise additional income in flexible ways does appear to benefit some households able to present an attractive Airbnb listing; these households may gain almost a fifth of their median monthly rental or mortgage costs. But participating in Airbnb is unlikely to improve affordability for those with very low incomes. We conclude that local planners will need to revise zoning and residential development controls to distinguish between different forms of short-term accommodation listings enabled by Airbnb and to manage their differential impacts on neighborhoods and permanent rental housing.

## The "Share Economy," Airbnb, and Urban Planning

### What Is Airbnb?

Airbnb is part of a growing movement variously dubbed the "sharing," "peer-to-peer," or "digital" economy, which uses advanced technological platforms to enable new operators to compete with traditional "brick and mortar" businesses (Morgan & Kuch, 2015; Orsi, 2013). Airbnb was founded in 2007 by two university graduates who reportedly offered air mattresses on the floor of their San Francisco (CA) apartment to conference delegates wanting to save money (Guttentag, 2015). The concept grew slowly at first, reaching a million booking nights by February 2011, primarily through listings in New York and San Francisco. By January 2012, Airbnb bookings and listings had grown tenfold, spreading rapidly beyond the United States. By August 2016, more than 2 million Airbnb listings were located in 34,000 cities and 191 countries across the world (Airbnb, 2016), with the highest numbers concentrated in Paris, France (78,000), London, United Kingdom (47,000), New York (46,000), Rio de Janeiro, Brazil (26,000), Los Angeles, California (23,000), and Sydney (more than 20,000 by August 2016; McCarthy, 2016). Airbnb's property and room listings now rival the world's largest hotel firms (Guttentag, 2015; Zervas, Proserpio, & Byers, 2014), although its assets remain dispersed and virtual.

Published academic studies on Airbnb come primarily from tourism researchers (Boswijk, 2016; Guttentag, 2015; Zervas et al., 2014), although there have been a handful of legal papers addressing the regulation of the share economy overall (Morgan & Kuch, 2015) and short-term rental accommodations in particular (Gottlieb, 2013; Palombo, 2015). A single study examines Airbnb impacts on Los Angeles' permanent housing supply (Lee, 2016).

Guttentag (2015) describes Airbnb in a review article as an "informal tourism accommodation sector" that has significant disruptive potential. Airbnb enables individuals to compete with hotel operators without major overhead or investment by connecting ordinary people who have homes or rooms to rent with tourists in ways previously not possible (Guttentag, 2015). Airbnb's pervasive marketing extends the potential reach of the sector far beyond that of traditional holiday rental homes and enables several new forms of accommodation. First, individuals can rent out a spare bed in a living area or room within their own house or apartment, remaining present during the visit. Second, people might list their homes for rent while they are away. Third, owners of holiday houses might make their property

available for others when not in use. Finally, investors might use Airbnb to market homes that are solely reserved for short-term tourism accommodations.

### What Are Airbnb's Impacts?

The economic impacts of Airbnb are contentious. Airbnb, which has invested considerable resources in commissioned studies and professional lobbyists (Guttentag, 2015), insists that online homesharing expands the tourism market rather than competing directly with hotels for the same customers. Airbnb also argues that homesharing visitors are likely to stay longer, spend more money overall, and bring new income to local neighborhoods (Boswijk, 2016). Independent studies, however, suggest that Airbnb listings will have negative impacts on local hotel revenue, particularly those at the lower end of the market, hurting established local providers and their employees (Boswijk, 2016; Guttentag, 2015). Zervas et al. (2014), in the most comprehensive study to date, compares Airbnb listings in Texas against the quarterly revenue of Texas hotels, finding that a 1% increase in Airbnb listings was associated with a 0.05% decrease in hotel income. Hotels at the lower end of the market, particularly venues without conference space, were the most affected. Airbnb's negative economic impacts on established local firms and their employees, however, may be offset by flexible expansion of tourism capacity during periods of peak demand, such as during conferences or conventions (Guttentag, 2015), or, as the company claims, by spreading tourist expenditure to new areas (Airbnb, 2014, 2016). Empirical evidence of economic benefits in non-tourism areas, however, remains limited (Boswijk, 2016).

There are extensive media reports on conflicts between local residents and Airbnb visitors and how cities are beginning to respond (Kelly, 2016; Khadem, 2016; Morris, 2015; Williams, 2016). New York City, concerned about the impacts of Airbnb on rental housing stock and affordable housing, was one of the first cities to seek to limit the spread of Airbnb (Zervas et al., 2014). It violates New York City laws to rent a whole home or apartment for less than 30 days via Airbnb, or any other means, but detecting illegal stays and prosecuting hosts (often commercial operators who own multiple properties) are extremely difficult (New York State Attorney General, 2014). The city of San Francisco now manages the potential loss of permanent rental accommodations (through their conversion to Airbnb rentals) by requiring Airbnb hosts to register with the city and by limiting sharing to short periods of time, provided that the hosts themselves reside in the dwelling for at least 275 days per year (City and County of San Francisco, 2014). Portland (OR) has added

an additional zone to its planning code, the accessory short term rental (ASTR; City of Portland, 2016). The city stipulates that this land use is an accessory to the normal residential purpose and that the dwelling has to be occupied by the host for at least 270 days per year. Portland, to manage impacts on multiunit apartment buildings, requires an ASTR permit and limits the proportion of dwellings with the permit to 25% of the dwellings in any one structure. The Airbnb system, however, requires hosts to voluntarily complete the permit process themselves, and observers have charged that the hosts rarely comply (Monahan, 2016). In Los Angeles, criminal proceedings have been brought against a landlord accused of evicting permanent tenants to establish an Airbnb rental. The practice, however, is thought to be widespread and difficult to detect and prevent (Poston, 2016). New startup companies have begun to assist in detecting these illegal holiday rentals by examining Airbnb listing data to identify information that they sell to city officials or landlords (Kelly, 2016).

Airbnb insists that hosts are responsible for understanding and complying with any applicable local controls or taxes applying to short-term tourist accommodations (Airbnb, 2016), while generally lobbying against stringent regulations (Airbnb, 2015; Guttentag, 2015). Proponents argue that the Airbnb market imposes a form of self-regulation on the quality of advertised accommodations and the trustworthiness of hosts and guests and suggest that there is no need for government intervention (Guttentag, 2015). Both guests and hosts rate each other on publicly accessible online reviews, which creates strong market-driven incentives to build and maintain a positive reputation, establishing the mutual trust essential to the business model (Boswijk, 2016). In 2016, Airbnb established an online facility for neighbors to complain about visitor behavior (<https://www.airbnb.com.au/neighbors>), promising that grievances will be forwarded to hosts.

Voluntary and market regulation, however, misses many of the traditional concerns that land use planners have about tourism accommodations, such as the opportunities to spatially cluster tourist facilities and services; the management of traffic, parking, and waste; building and urban design requirements to attenuate noise and privacy impacts; appropriate fire, safety, emergency, and disability access requirements; and likely levels of occupancy and potential overcrowding (Palombo, 2015).

Voluntary codes and market approaches to regulating online homesharing platforms, moreover, will not address concerns that permanent rentals are being converted to tourist accommodations. Indicators that conversions may be occurring include the number of listings held by a single



operator and frequently available to tourists (McCarthy, 2016), potential Airbnb revenue (nightly rates and monthly incomes) compared with permanent weekly rents (Cox, 2016), and the location of Airbnb listings in residential areas. Spatial analyses of listing data also provide evidence of tourist encroachment into residential neighborhoods, as demonstrated in a geographic information systems (GIS)–based study of Airbnb in Barcelona (Gutiérrez, Carlos García-Palomares, Romanillos, & Henar Salas-Almedo, 2016).

Lee (2016) examines Airbnb listings, census and municipal data relating to the city of Los Angeles, and county housing markets to understand Airbnb's impacts on rental supply and affordability. Lee finds that 7,316 units of accommodation had been removed from the city's rental market, with particular pressure in beachside neighborhoods such as Venice, where up to 12.5% of the neighborhood's apartments were listed on the platform. The study uses rental vacancy rates as an indicator of supply pressures to understand the impact of Airbnb conversion on rental housing affordability. This is an established housing market indicator that measures vacant rental stock available for rent as a proportion of the total rental stock. The equilibrium vacancy rate is defined as the vacancy rate at which there is no upward or downward pressure on rents (Belsky, 1992). If the vacancy rate becomes lower than the equilibrium rate, renters will compete with each other to secure rental property, pushing up rents. If the vacancy rates are higher than the equilibrium rate, there will be downward pressure on rents as landlords reduce rents to ensure their properties do not remain vacant. Belsky (1992) demonstrates how this equilibrium rate varies between cities, largely because of the nature of landlords. In the Sydney housing market, for example, this rate is estimated to be about 3% (Real Estate Institute of NSW [REINSW], 2016).

When rental vacancy rates are lower than or close to the equilibrium rate, even small changes in rental stock can materially affect rents (Centre for Affordable Housing, 2015). In Los Angeles, for example, Lees (2016) finds that up to 3% of apartments in districts with vacancy rates lower than the equilibrium rate have been removed from the market, which, given the time taken to construct new housing stock, would constitute a sudden supply shock and lead to upward pressure on rents.

Proponents also claim householders that rent out their homes can earn vital income that helps them afford their own rents or home mortgages, allowing them to remain in high-value locations (Airbnb, 2014; Guttentag, 2015). No academic research has yet examined this claim, but the potential pool of homeowners or renters able to achieve these benefits is likely limited. Those with poor computer

skills or no Internet access, for example, are less able to participate in the “digital economy” in general, whereas successful Airbnb listings will depend on the individual characteristics of homes (appearance, presentation, location, facilities) and the households themselves (Edelman & Luca, 2014).

In summary, there is only nascent scholarly research on the specific neighborhood and housing market impacts of Airbnb rentals, and the ways in which these impacts are managed by local land use planning frameworks. Review articles from tourism researchers (Guttentag, 2015) provide an overview of key issues, but questions remain about the specific impacts in residential and neighborhood settings, and whether modifications to existing land use planning frameworks are needed to manage these impacts. Specific cities have been concerned that Airbnb and other online short-term rental accommodation platforms will increase pressure on the local housing market, but the research literature is thin, meaning that wider applicability to other cities and contexts is unclear. The possibility that Airbnb-style platforms might also help some households meet their own housing costs, as Airbnb claims (Airbnb, 2014), warrants further examination. If short-term visitor hosting is potentially beneficial for income-constrained households seeking to meet rent or mortgage payments, planning and regulatory responses should be designed to support these opportunities while minimizing impacts on neighboring residents.

## Investigating the Impacts of Airbnb in Sydney

Australia's largest city, Sydney, in the state of New South Wales (NSW), is the nation's economic center and the Asia Pacific headquarters for many global firms. It is also a focus for domestic and international tourists, receiving 32.5 million visitors in 2013 and 2014 (Ironsides, 2015). There are 28 local government areas in the region, called councils or shires, which are similar to London's boroughs. Sydney's house prices are high by international standards and have risen rapidly since 2013 from a median of around AUD\$600,000 to AUD\$900,000, more than 10 times the median annual income (ABS, 2015). There are inherent housing supply constraints against this strong demand. Employment opportunities tend to be concentrated in the city center and surrounding inner neighborhoods (called “suburbs” in Australia), which have undergone rapid densification in the form of new medium- and high-rise apartment buildings. Demand for accommodations in inner locations, however, continues to outstrip

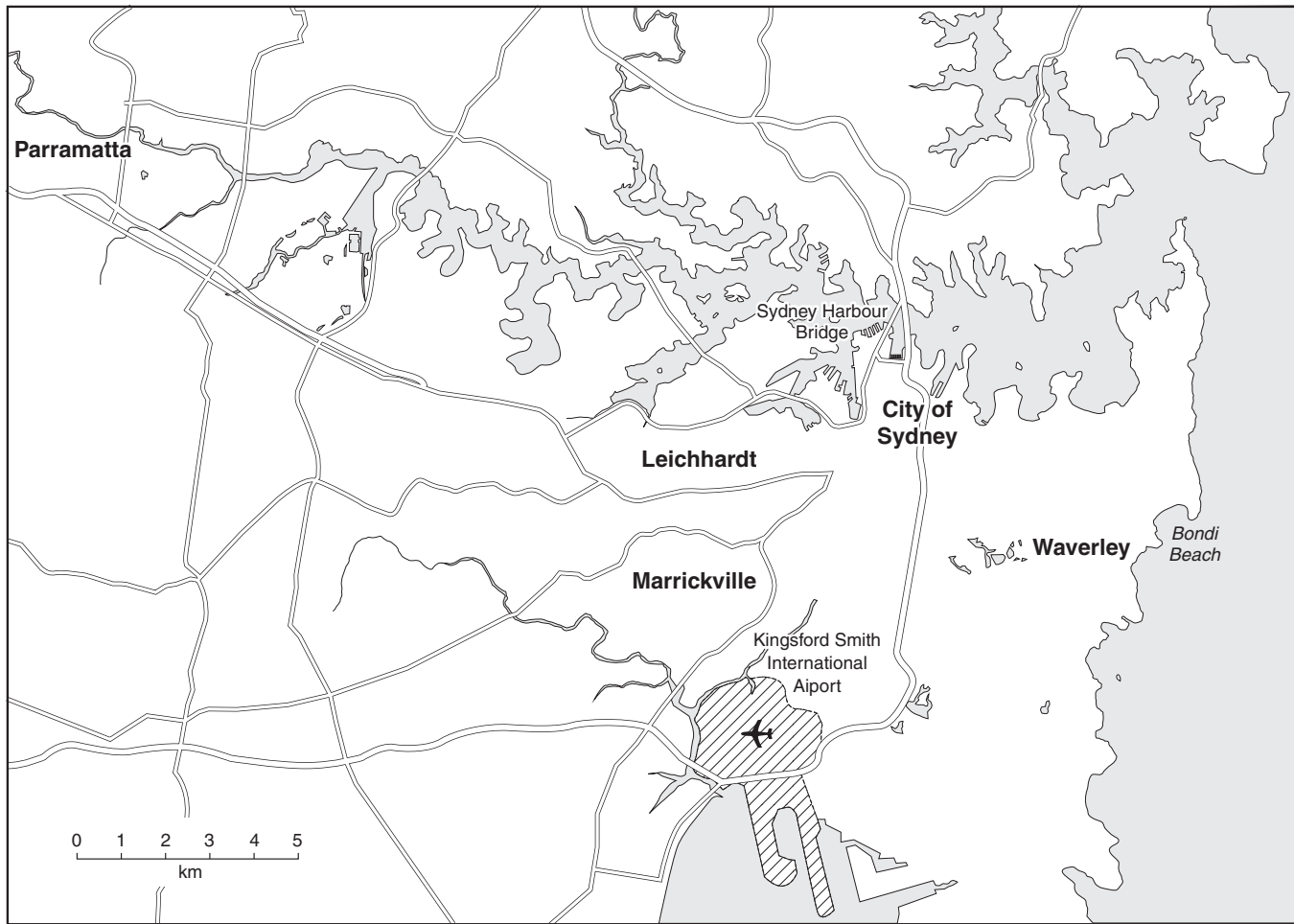


Figure 1. Greater Sydney, Australia.

supply (Shelter NSW, 2014). Many of these inner suburbs are located near Sydney's harbor and beaches, so they are also a focus for international tourists. Figure 1 shows the tourist focal points of Sydney Harbour and Bondi Beach, as well as the city's wider metropolitan context.

There has been a steady loss of existing lower-priced housing stock in Sydney's inner suburbs since the late 1980s, when developers began to convert older buildings into budget tourist accommodations (known as "backpacker" hostels; Peel & Steen, 2007). Attempts to control this process through the planning system have improved safety standards and restricted the location of these hostels to designated areas, although the loss of low-cost rental housing has continued. Thus, the entrance of Airbnb in Sydney occurred within a local context already concerned by the intrusion of tourists in residential areas.

In late 2015, the NSW Parliament launched an inquiry into the adequacy of regulations on the short-term rental sector, partly in response to concerns about the spread of online visitor accommodation platforms such as

Airbnb. The inquiry invited public submissions and held a series of hearings. The inquiry was not finalized by the time of this writing; however, many of the 212 written submissions provide primary insights on the impacts of Airbnb rentals for local communities and the views of local planners on the regulatory framework. We select nine submissions for detailed analysis, including four written by local planners on behalf of their municipalities and one by the representative body for NSW local government; another by a network of individuals owners concerned about short-term renting in their apartment buildings; and three submissions on behalf of online holiday rental providers and advocates, including Airbnb. Three of the local government submissions correspond with our sample of Sydney municipalities, and the fourth (Blue Mountains City Council) is a popular tourist area on greater Sydney's western fringe. We focus on the types of impacts attributed to online holiday rentals, the extent to which these differ from impacts associated with traditional tourism or residential activities, and views about the adequacy of existing state and local planning controls.

Land use planning across the greater Sydney metropolitan area is governed by the State of NSW and implemented by local government municipalities.<sup>1</sup> State legislation establishes the parameters for comprehensive local plans, which include land use zoning and development controls generally drafted by local government. To determine how tourism and residential activities are regulated in this planning framework, we review written evidence provided by local planners and undertake a primary review of state and local controls applying to five local municipalities across the Sydney metropolitan area. These include the city of Sydney itself, which encompasses the central business district as well as tourist attractions like the Harbour Bridge; the municipality of Waverley, which covers the iconic Bondi Beach; Marrickville and Leichardt municipalities, which have traditionally accommodated recent immigrants, students, and urban professionals; and Parramatta, a major commercial center in Sydney's geographical heart. The locations of these municipalities in relation to key tourist attractions and the wider metropolitan context are shown in Figure 1.

We use Inside Airbnb (InsideAirbnb.com) data to establish the quantity and type of listings across the Sydney metropolitan area. InsideAirbnb.com is a noncommercial source of data derived from publicly available information on Airbnb listings. The data are extracted and compiled by independent researcher Murray Cox (2016), providing point-in-time information (January 2016) on the number of Airbnb listings by geographic area (corresponding to suburbs and local government municipalities for Sydney); advertised availability (as a fraction of 365 days); the number of Airbnb listings per host; nightly prices; and reviews per month. This data source has some critical limitations: As with any online advertising, there is the potential for outdated or "bait and switch" listings (advertising of properties that upon investigation are not actually available). Nor is it possible to determine whether properties listed have long been available for short-term holiday renting, or as conventional bed and breakfast accommodations that now use the Airbnb platform for marketing and booking. Nevertheless, the data provide a useful basis for examining and monitoring Airbnb practices and penetration across local and regional housing markets; it is the primary data for two of the studies we cite above (Gutiérrez et al., 2016; Kakar, Franco, Voelz, & Wu, 2016).

We also examine the composition of listings (whole houses or apartments, rooms, and shared rooms) to distinguish between Airbnb accommodations where hosts rent some spare rooms in their property on a casual basis

versus a landlord who lets out an entire property for most of the year.

Rental vacancy rates provide a baseline measure of the potential housing market impact of Airbnb listings. The literature reports on the vacancy rate approach; it is used in the study of Airbnb and housing impacts in Los Angeles (Lee, 2016). We derive vacancy rate data pertaining to Sydney monthly from permanent rental advertisements data as a proportion of the total rental stock in each municipal area (REINSW, 2016). Inside Airbnb data also provides information about the proportion of listings managed by a single operator, which we use as an alternative measure of potential for Airbnb listings to encroach on permanent rental supply.

We use census data (ABS, 2012) on median monthly mortgages and state government data on median monthly rents to examine whether Airbnb income might help hosts meet their own housing costs, comparing the census data with average monthly incomes from each Airbnb accommodation type. Census data are the most definitive source of information on monthly mortgages by municipality although only median amounts are reported; we note that these may be lower than new mortgages and loans held by first-time homebuyers. We are not able to explore the possibility that Airbnb revenue potential may become capitalized into house prices and rents using the current data set, but we could do so when longitudinal information becomes available.

## Do Airbnb Rentals Require a New Land Use Planning Response?

Table 1 summarizes our findings in reviewing selected submissions to the NSW inquiry on short-term holiday accommodations. All of the local government submissions report that noise, nuisance, traffic, parking, and waste management issues may arise when short-term holiday accommodations penetrate residential areas. Larger groups typically prefer holiday homes or apartments, thus increasing the potential for noise impacts from parties and drunken behavior, as well as traffic and parking congestion (Thomas, 2015). In localities strongly oriented toward tourism, short-term holiday rental of residential homes is an established practice and largely welcomed (Rhodes, 2015). In higher-density metropolitan areas that already experience traffic and parking congestion, however, increasing numbers of tourists are often resented. Indeed, the submission by Leichardt City Council states that the onset of Airbnb rentals resulted in the rise of resident complaints about tourist behavior

Table 1. Submissions to New South Wales (NSW) inquiry on the regulation of short-term holiday accommodations.

Organization	Key issues
City of Sydney	<ul style="list-style-type: none"> <li>• Current planning regulation has not kept up with the new business opportunities that online technologies enable</li> <li>• Frequent short-term letting without the presence of the primary resident changes the use of a residential property</li> <li>• Traditional tourism activities occur in buildings designed for that purpose in designated locations; online providers establish operations in residential buildings and neighborhoods</li> <li>• Low-impact lettings could be permitted within certain guidelines but higher-impact uses need regulation to separate them from residential areas</li> </ul>
Leichhardt Municipal Council	<ul style="list-style-type: none"> <li>• Growing number of resident complaints about Airbnb accommodations</li> <li>• Complaints may reflect unease with increased numbers of visitors within the neighborhood rather than significant noise or other impacts</li> <li>• Low-impact uses are unlikely to be detected</li> <li>• Planning regulations currently unclear</li> </ul>
Waverley Council	<ul style="list-style-type: none"> <li>• Limited supply of traditional holiday accommodations but high demand in Waverley means short-term rentals are penetrating permanent housing stock</li> <li>• Use of a property for short-term rental is incompatible with most residential zones, but detection and enforcement is difficult</li> <li>• Airbnb platform introduces potential for new and unregulated forms of budget “backpacker” accommodations</li> <li>• Pressure for short-term rental and backpacker housing will affect housing affordability</li> </ul>
Blue Mountains City Council	<ul style="list-style-type: none"> <li>• Holiday rentals are typically meant for friends and family (rather than a single or couple), and more people mean higher potential impacts (noise, antisocial behavior, parking problems, rubbish)</li> <li>• With an online booking system, scope for neighbors to complain is reduced</li> <li>• Bed and breakfast operators are onsite to moderate guest behavior</li> </ul>
Local Government NSW	<ul style="list-style-type: none"> <li>• Issues of short-term rentals longstanding in popular tourist destinations and generally tolerated</li> <li>• In more densely populated areas where parking and traffic congestion is already a problem, local residents are generally more negative about the rise of Airbnb</li> <li>• Planning issues are difficult to characterize because holiday uses may be intermittent and vary in intensity</li> <li>• NSW case law establishes that short-term renting of a house does not change its residential character</li> </ul>
Stayz	<ul style="list-style-type: none"> <li>• Airbnb has brought housesharing and short-term rentals into metropolitan areas in Australia in a much bigger way</li> <li>• Banning short-term holiday rentals or requiring complex regulation would drive the practice “underground” or reduce tourism from the area</li> <li>• Short-term holiday rental owners who use the Stayz platform maintain the property for personal use for part of the year, renting it out to cover costs</li> </ul>
Owners Corporation Network	<ul style="list-style-type: none"> <li>• Different building standards for fire safety are needed in apartment buildings catering to visitors, who are unfamiliar with emergency exits and protocols</li> <li>• Ever-changing strangers often have little regard for building security and etiquette</li> <li>• Short-term letting of apartments is associated with excessive noise, drunken behavior, garbage disposal issues, and violations of visitor parking restrictions</li> </ul>
Sharing Australia	<ul style="list-style-type: none"> <li>• Homesharing provides income for people who want to live in their own home and are often underemployed, self-employed, or retired</li> <li>• Voluntary self-regulation via a holiday rental code of conduct and certification/accreditation systems is preferable to government oversight</li> </ul>
Airbnb	<ul style="list-style-type: none"> <li>• Airbnb provides important income for hosts, allows them to stay “in communities” despite increased living costs</li> <li>• Neighborhoods which would not otherwise receive tourists benefit from visitor expenditure</li> <li>• NSW planning law is inconsistent and should clarify that residents can host short-term visitors</li> <li>• Local councils should introduce their own regulations for professionally operated holiday homes</li> </ul>



from one in six months to a weekly occurrence (Richardson, 2015). Resident complaints reflect, however, a more general disquiet about the increasing presence of visitors in the neighborhood, rather than tangible noise or nuisances:

Significantly, the complaints are not about noise or outrageous behavior, but merely the perception that a new person or people are occupying the premises each week. It is the feeling of unease that the changing tide of faces brings on. (Richardson, 2015, p. 4)

Resident owners of apartment buildings express more specific complaints about the increasing prevalence of short-term guests, including garbage disposal and parking problems; they note that visitors often ignore security, fire, and safety protocols (Stiles, 2015).

There are mixed views about the need to modify local plans to better regulate short-term accommodations. Each of the local government submissions report that the current planning framework is inadequate because it does not define or regulate the types of activities now enabled by online accommodation listing platforms. Stayz.com suggests that complex regulatory requirements would drive practices “underground” (Stanish, 2015). Airbnb argues that NSW planning law is inconsistent between local government areas, calling for the government to clarify that residents can host short-term visitors, and advocating for local councils to introduce their own regulations for professionally operated holiday homes (Airbnb, 2015).

We examine the specific planning controls applying to our selection of local government areas to further explore these issues. In NSW, each local government is required to adopt zoning and development controls from a suite of state-specified mandatory and optional provisions, although cities have some discretion to enact their own specific regulations in response to local circumstances. These mandatory provisions are contained in the NSW Standard Instrument–Local Environmental Plan (Gurran, 2011). A number of categories of tourist and visitor accommodations are defined by this instrument, including “backpackers’ accommodation,” “bed and breakfast accommodation,” “hotel or motel accommodation,” and “serviced apartments.” Local governments are then able to assign these different types of accommodations to specific land use zones. The Technical Appendix (available at the publisher’s website) summarizes the NSW tourist and visitor accommodation types that most closely resemble offerings available via Airbnb, and

outlines the overarching state and local planning frameworks applicable to each.

All forms of tourist and visitor accommodations are regarded as a “development” and therefore require planning permission. If the activity is to occur within an existing dwelling, hosts must seek a “change of use” permission. “Bed and breakfast accommodation” is typically permitted within dwelling houses (not apartments) in lower-density residential zones, including our sampled municipalities, if operators obtain approval and pay a “development contribution” (akin to an impact fee) toward local facilities and services before starting business. The state’s law governing bed and breakfast accommodations specifies standards for the design of kitchens if operators intend to serve food, and require a designated bathroom for guests. Each local government area may also impose their own onsite parking requirements for bed and breakfast establishments that are often difficult to achieve in inner-city locations (Richardson, 2015). The locations in which the other forms of tourist accommodations (serviced apartments, backpackers, and hotels or motels) are permitted are restricted to zones permitting commercial and mixed uses only.

Several submissions by local planners focus on whether renting homes, rooms, or beds to tourists changes the fundamental use of residential housing to one of these forms of tourism accommodations, thus violating zoning rules (Maher, 2015; Thomas, 2015). Planners express the view that in general the intensity and frequency of holiday rentals are critical considerations. Occasionally renting a home while the occupants are away would not constitute a change of use from residential to tourism accommodation (Richardson, 2015) and should not usually require special permission. Nor would occasional periods of homesharing with paying tourists who occupy rooms or beds during certain times of the year. However, repeated listings (more than 90 days per year was a commonly cited threshold) combined with intrusive visitors—one potential test being noise or other complaints—could mean that the property is no longer being used for residential purposes (Thomas, 2015). Detecting and compiling evidence of the change of use is another matter; local governments report that they do not have the resources to track and enforce breaches unless violations are brought to their attention by residents (Waverley Council, 2016). Advocates for online accommodation providers, in contrast, argue for legal legitimacy through recognition in local plans but relief from intensive regulatory requirements. Airbnb argues that the government should clarify that residents can host short-term visitors, for example.

## Do Airbnb Rentals Reduce the Supply of Permanent Rental Accommodations?

Several local government submissions to the NSW inquiry raise the issue of housing availability and affordability (Richardson, 2015; Thomas, 2015). Waverley Council in particular expresses concern about the loss of permanent accommodations for short-term holiday rentals or illegal backpacking hostels. Sharing Australia, an advocate for homesharing, however, emphasizes the potential income-generating opportunities for the underemployed or retired (Willmer, 2015). Airbnb argues in its submission that the platform allows hosts to “make ends meet, keeping residents in communities amid increasing living costs and income inequality” (Airbnb, 2015, p. 6).

We summarize in Table 2 the results of our own analysis of the potential for Airbnb rentals to affect the supply of Sydney’s permanent rental accommodations. Table 2 shows that nearly 1% of Sydney’s total dwellings and 3.26% of the total rental stock were available for short-term stays via Airbnb in late 2015; Figures 2 and 3 show whole-home listings, rooms, and shared rooms spread across the metropolitan region. Nearly a third of greater Sydney’s listings are held by individuals who own multiple properties; frequently listed

Airbnb rentals provide lucrative income, exceeding permanent rental income for greater Sydney by more than AUD\$600 per month. Combined, these indicators suggest that Airbnb rentals are likely to create upward pressure on Sydney’s rents.

Sydney’s equilibrium rental vacancy rate is approximately 3%, while the metropolitan-wide rental vacancy rate at the time of this analysis was 1.9% as a result of strong population growth. We calculate that the number of dwellings removed from the permanent rental market in the region amounts to about half of Sydney’s current rental vacancy rate based on the Inside Airbnb data on frequently available listings. We find that Airbnb listings do concentrate in popular tourist areas such as Waverley and the city of Sydney. In Waverley, the number of whole dwellings frequently available on Airbnb is more than three times the vacancy rate in the locality. This suggests that Airbnb rentals have a sizeable impact on the availability of permanent rental housing in the Waverley local government area with consequent pressure on rents. In the city of Sydney, a total of 1,268 properties, equivalent to 144% of the city’s vacant rental stock, are available for holiday rental via Airbnb, a figure we would also expect to substantially affect rental availability and costs. In Leichardt and Marrickville, the percentages are lower but not inconsiderable at 69% and

Table 2. Sydney Airbnb rentals, housing supply, and affordability indicators.

	Greater Sydney	City of Sydney	Waverley	Leichardt	Marrickville	Parramatta
Housing stock	1,720,333	73,171	24,874	21,320	29,976	63,484
Airbnb listings	15,648	4,221	2,807	412	586	120
Rental housing stock	480,608	43,793	11,620	8,649	12,891	22,286
Frequently available Airbnbs (whole homes)	4,667	1,268	821	120	114	23
Rental vacancy rates	1.90%	2.0%	2.0%	2.0%	2.0%	1.90%
Frequently available Airbnbs as a proportion of rental vacancy rates	51%	145%	353%	69%	44%	5%
Proportion of multiple listings	30.8%	44.3%	29.2%	14.3%	27.5%	81.8%
Median rent	\$2,040	\$2,960	\$2,920	\$2,760	\$2,200	\$1,800
Median mortgage	\$2,167	\$2,539	\$3,000	\$3,000	\$2,485	\$2,063
Airbnb monthly income, frequently available homes	\$2,663	\$2,866	\$2,947	\$2,659	\$1,875	\$1,756
Airbnb rooms/beds	5,938	1,657	994	158	316	84
Airbnb rooms/beds as a proportion of total housing stock	0.9%	2%	4%	1%	1%	0%
Airbnb rooms/beds, monthly income	\$385	\$499	\$294	\$532	\$376	\$281
Airbnb rooms/beds, monthly income as % of median rent	18.9%	16.9%	10.1%	19.3%	17.1%	15.6%
Airbnb rooms/beds, monthly income as % of median mortgage	17.8%	19.7%	9.8%	17.7%	15.1%	13.6%

Note: All in AUD\$.

Sources: ABS, 2012; Department of Family and Community Services, 2016; InsideAirbnb.com; REINSW, 2016.

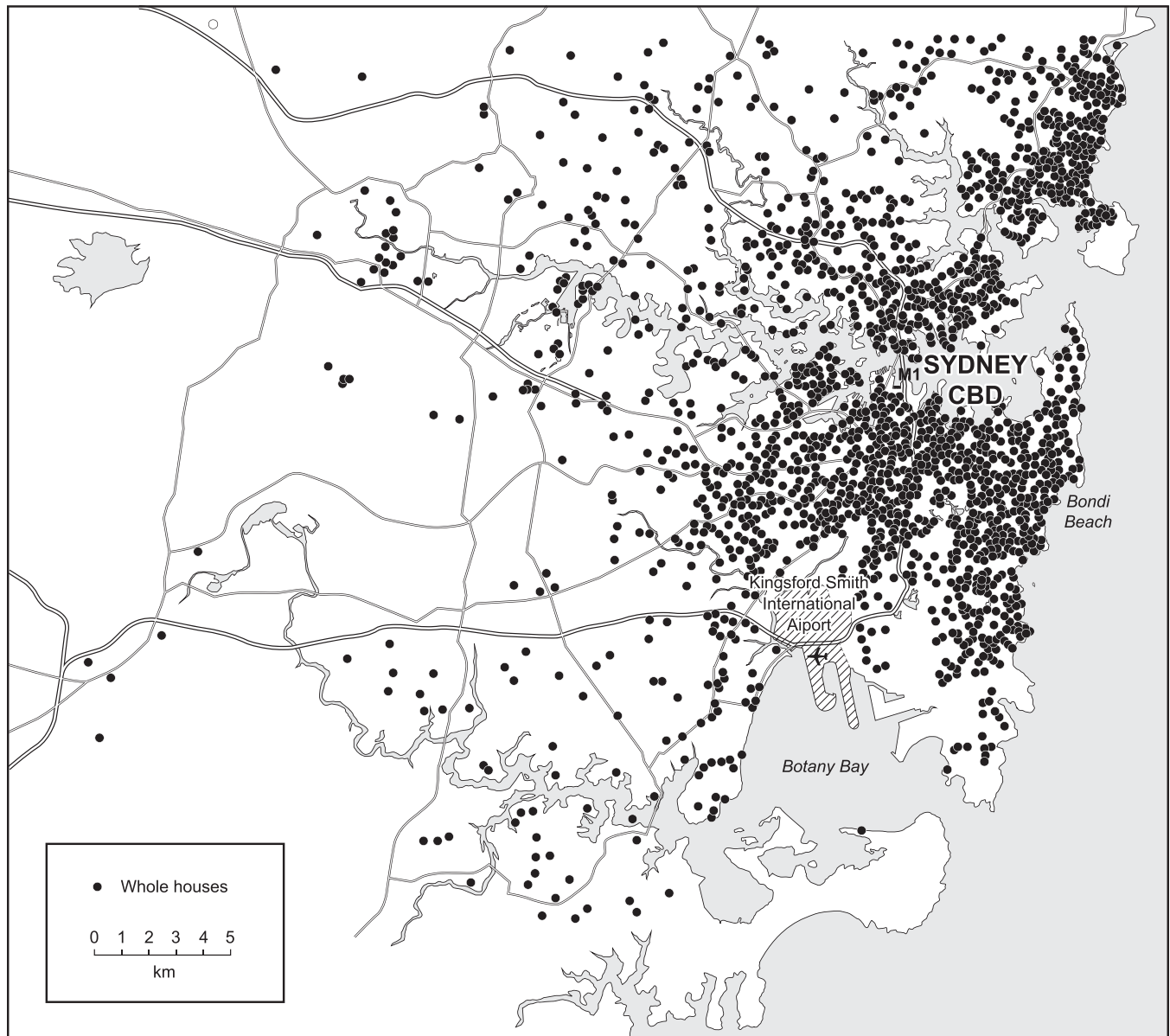


Figure 2. Whole-house Airbnb listings, January 2016.

Source: Derived from Inside Airbnb, 2016.

44% of the vacant rental stock, respectively. However, the number of Airbnb listings in Parramatta is much smaller, likely reflecting the area's distance from visitor attractions. Airbnb does not now affect Parramatta's local housing market, even though Parramatta's frequently available homes are controlled by landlords with multiple listings.

### Does Airbnb Offer Flexible Income to Help “Hosts” Make Their Own Homes More Affordable?

Airbnb probably only assists people to meet their housing costs by sharing homes with tourists when the

host remains in the property and rents out rooms or beds. Sharing listings actually exceed Airbnb listings for whole dwellings in Sydney; Figure 3 shows that shared listings extend beyond the inner urban core. Online homesharing with tourists, however, does not appear widespread across the general population as a percentage of total stock (or households). The municipality of Waverley is the possible exception, where around 4% of households share their homes with fee-paying visitors. In the other sampled municipalities, homesharing via Airbnb is much less prevalent (from 2.3% in Sydney to 0.1% in Parramatta).

These findings suggest that only a small sector of the population benefits from Airbnb income, likely those able

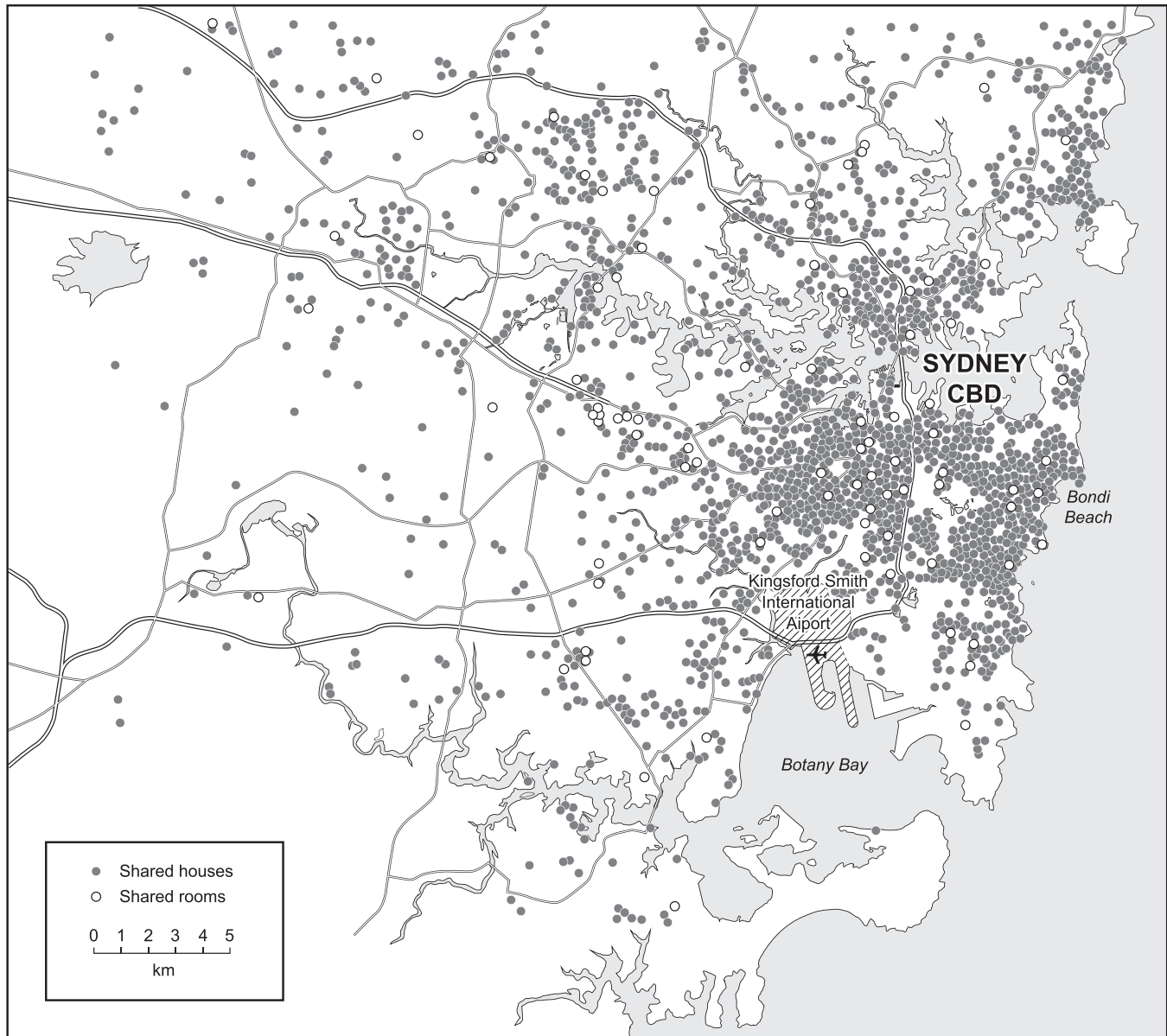


Figure 3. Airbnb rooms and beds, January 2016.

Source: Derived from Inside Airbnb, 2016.

and willing to present their homes in a way that is appealing to the online accommodation marketplace. Those who do list rooms and beds on Airbnb, however, are obtaining rental income equivalent to 10% to 19% of median rents and mortgages. In Waverley, where the practice is most prevalent, renters or homeowners receive around AUD\$294 per month, or 10% of municipal median rent or mortgage expenses. Airbnb rental income makes an even greater contribution to housing expenses in Leichardt and Sydney, rising to nearly 20%. The risk for aspiring home purchasers in these locations over time, however, is that this mortgage “relief” might become capitalized into housing prices, undermining any affordability benefits.

## Conclusions: How Should Urban Planners Respond to Airbnb?

In this study, we examine the expansion of online visitor accommodation listings in the Sydney metropolitan region epitomized by the Airbnb platform, focusing on implications for urban policy and planning. We ask whether Airbnb rentals generate neighborhood impacts that require a new land use planning response; create pressure on the permanent rental housing supply; or offer flexible income to help hosts make their own homes more affordable. Our primary data sources include written submissions to a NSW inquiry on short-term renting, local planning controls on tourist and visitor accommodations for a selection of Sydney



municipalities, and InsideAirbnb.com listings and real estate data for late 2015 to early 2016. We note the limitations in these data sources, primarily arising from the difficulties of monitoring online operations and of quantifying housing market impacts, particularly given the rapid evolution of Airbnb and of local and state regulatory responses. Our study, however, only provides an early contribution to understanding some of the complex policy and planning challenges presented by online homesharing platforms for visitor accommodations. Future studies will benefit from longitudinal data to examine the trajectory of Airbnb and the effects of emerging local planning responses.

Our findings show that Airbnb listings aggregate in areas of high tourist visitation but also extend beyond the inner core to Sydney's residential areas already affected by tight rental demand. In areas of high Airbnb visitation, there is growing concern over tourist behavior in residential neighborhoods and apartment buildings, particularly when whole homes or apartments are offered by absent hosts on a permanent or semipermanent basis. There is considerable potential for Airbnb (or other online holiday accommodation platforms) to remove whole homes from the permanent rental supply and therefore considerably increase pressures on rents, a pressure even more marked in certain parts of Sydney. The opportunity to raise additional income in flexible ways may benefit some households able to present an attractive Airbnb listing, but the practice is not widespread, even in the most popular areas of beachside and inner Sydney.

Local planners need to evaluate the potential impact of online housesharing on the potential housing market as well as the neighborhood impacts (noise, congestion, safety) and revise zoning and residential development controls accordingly. All planning efforts should be supported by a strong policy framework for monitoring the impact of Airbnb rentals on the availability and cost of lower-cost permanent rental accommodations, and ongoing research and analysis to fully understand implications for local neighborhoods and housing markets.

## Supplemental Material

Supplemental data for this article can be accessed at the publisher's website.

## Note

1. When we carried out the study, there were 43 local municipalities in Sydney; however, since this time, local government has undergone a period of reform and amalgamation, reducing the total number of jurisdictions.

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