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Housing need assessments in San Francisco, Vancouver, and Melbourne: normative science or neoliberal alchemy?

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ABSTRACT

Governments in much of the Global North have responded to dramatic increases in house prices and rents by setting supply-side targets for new housing in regional and local plans, based on calculations of need. We apply social constructionism to assess widely divergent needs assessments underlying housing strategies in San Francisco, US; Vancouver, Canada; and Melbourne, Australia. In San Francisco, authorities use an approach required by the state government that ignores overcrowding and other 'invisible' criteria. In Vancouver, authorities have taken an ambitious approach that goes beyond a minimum quantum of affordable housing to discuss limits to market production. In Melbourne, the state government has chosen to ignore its own commissioned needs assessment to de-prioritize concerns around affordable housing shortages. We conclude by recommending that planners apply greater rigor in housing needs assessments, that can inform public debates around more equitable housing policy.

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Introduction: housing supply targets under neo-liberal governance

Under neo-liberalism, governments around the world have moved from direct provision or control of housing, to steering a complex network of mostly private providers, with residual non-profit and state providers meeting the needs of very low income households (Austin *et al.*, 2014; Darcy, 2010). However, evidence appears to suggest that most governments do not have the capacity to adequately manage privatized provision of social goods (Milward & Provan, 2000), leading to an increasing affordable housing crisis. Part of the problem appears to be an incapacity—or unwillingness—to provide one of the basics of a good strategic plan: namely, spatialized targets related to ability to pay housing costs, with regular monitoring in relation to achievements towards these targets (Berke & Godschalk, 2009). Instead, governments and other stakeholders often produce high level policy documents highlighting large shortages of aggregate housing supply. These estimates help create the impetus for governments to eliminate perceived regulatory barriers to development. Gurran and Phibbs (2015)

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compare the evidence on two widely debated causes of dramatic home price rises in Sydney: a shortage of supply caused by planning system inefficiency, and tax incentives for property investors. They conclude that the dominant narrative in Australia, which holds that a planning-induced supply shortfall is responsible for high housing prices, reflects ‘politics, ideology and vested interests’ (p. 68) rather than empirical evidence on the issue. Housing is not over-regulated; it is inadequately governed.

This article offers two contentions. First, we argue that housing needs studies underlying supply targets are often the awkward products of methodological constraints, growth agendas, and data gaps, rather than outputs of careful science. Put simply, we argue that most housing needs studies support a growth machine agenda (Hare, 1993; Molotch & Logan, 1984), rather than the imperative to provide housing for those most in need. Second, we contend that these assessments and their limitations have dire consequences for policy making. We establish this contention through an analysis linking our case studies’ assessments and programmatic outcomes.

We limit our analysis to studies estimating housing supply shortages in the ten years since the 2008 Global Financial Crisis (GFC). We take a comparative approach, focusing on three cities facing particularly acute housing price increases in the past decade: San Francisco, United States; Vancouver, Canada; and Melbourne, Australia.

In San Francisco, local planning authorities have produced affordable housing targets using a state needs assessment methodology that wildly underestimates housing need. In Vancouver, local planning authorities are engaged in deriving a relatively radical definition of ‘right supply’. In Melbourne, planning authorities have ignored substantial evidence on affordable housing need, reflecting a deep divide between thorough research and weak policy.

Theoretical approach: housing needs assessments as tools to construct housing problems

Social constructionism offers a theoretical framework to understand policy responses as the product of interest groups, social movements and institutions competing to set policy agendas (Jacobs & Manzi, 2000). A rich literature applies social construction to housing policy across the English-speaking world, focusing most extensively on efforts to redevelop or privatize public housing estates. These studies demonstrate that the shift in policy focus away from building public housing and towards neoliberal or market-friendly housing policies reflects the interests of powerful stakeholders, such as developers and land owners, and not necessarily empirical evidence in relation to low income households most affected by these policies (Darcy, 2010; Gabriel *et al.*, 2005; Goetz, 2013).

Social constructionism also examines planning policy as a political process in which actors construct a problem, build a narrative, assemble partnerships, and design policy responses to address the problem (Jacobs, 2006). Social constructionist housing scholarship thus frequently takes aim at discursive representations of problems and their solutions (Jacobs, 2006), as well as the conceptual and empirical efforts to construct problems (Gabriel *et al.*, 2005). This article fits within the latter approach. We explore housing needs assessments as efforts to construct and design a

problem through empirical knowledge production, as these assessments seek to measure the number of housing units needed to solve local deficits. We thus dissect their methodologies and level of empirical rigor, as policy actors strategically ignore or design knowledge in ways that suit their own agenda (Flyvbjerg, 2002). To do this, we uncover hidden assumptions and selective engagement with a wide literature, in line with social constructionism's efforts to unsettle "the taken for granted assumptions about the economy and markets, housing and homelessness" (Fopp, 2008, p. 164). We interrogate the data, narratives and priorities expressed in methodologies of these documents: what they measured and what they left out.

Evaluating housing needs research

A Google Scholar search of the term 'housing need' reveals a wealth of literature (over 20,000 results) in which conceptualizations of need are defined and debated. To categorize this vast literature we borrow the "Three-As" terminology used by U.S. Department of Housing and Urban Development (HUD)-funded researchers for both its simplicity and comprehensiveness: affordability, availability and adequacy (Bogdon *et al.*, 1993). This framework tracks closely with the Canadian Mortgage and Housing Corporation's definition of core housing need, which accounts for affordability, adequacy (habitability) and suitability (not overcrowded) (CMHC, 2018). We offer them as a starting point for comparing conceptual debates in the literature with current practice in our case studies, and not necessarily to advance them as the best or only criteria with which to dissect housing needs assessments.

Affordability, availability and 'gap analysis'

Housing affordability plays a major role in most methodologies adopted by planners for defining housing needs, and for good reason. A wealth of evidence links housing unaffordability with worsening life outcomes across a range of areas. This research includes impacts to physical health (Krieger & Higgins, 2002), mental health (Bentley *et al.*, 2011), educational outcomes in children (Mueller & Tighe, 2007), and the survival rates of individuals living with chronic diseases (Rourke *et al.*, 2012; Schwarcz *et al.*, 2009).

A lack of consensus on how to define housing affordability constrains efforts to produce consistent approaches to measuring need. Households paying more than 30% of their income on housing are considered 'housing stressed' in Canada and Australia, or 'cost-burdened' in the United States, but application of this rule to policy varies by country. British researchers and agencies, for instance, have applied both a 30% and 25% threshold (Bramley *et al.*, 2005; Bramley & Karley, 2005). Australian researchers and policymakers only apply the 30% approach to households in the bottom two quintiles of the national income distribution when defining need (Hulse *et al.*, 2014). This framework, known as the '30/40' approach, assumes that households above the 40th percentile of the national income distribution paying more than 30% of their incomes on housing do so by choice, and can likely afford other necessities regardless (Gabriel *et al.*, 2005). Other Australian researchers have embraced the

need to measure affordability along a continuum of incomes from those in crisis housing to middle income professionals seeking homeownership (Rowley *et al.*, 2017). Canadians do not limit the application of the 30% rule by income, but they do exclude households who could be expected to find an affordable and available alternative in their region (CMHC, 2018). American policymakers and researchers, in contrast, generally apply the 30% approach to three separate groups of households defined in relation to the median income in their respective regional jurisdictions. Defining affordability based on regional incomes enables an estimation of housing need that accounts for wide variation in housing costs and household incomes across a nation as diverse as the United States. The three income groups defined include extremely low income households, or those with incomes between 0% and 30% of their respective Area Median Incomes (AMIs), very low income households (30% to 50% of AMIs) and low income households (50% to 80% of AMIs). The federal government does not recognize any higher income group, although some states recognize households falling between 80% and 120% of AMI as moderate income (CDHCD, 2018). American policymakers and advocates then identify housing need for each income group by taking the difference between the number of households in that income band and the number of units that are affordable to that income band according to the 30% rule (Aurand *et al.*, 2017; Nelson, 1994).

Critics of this approach note that it ignores high income households renting in units affordable to lower income groups (Stone, 1994), recognizing a need to consider affordability and availability together. The estimates of need resulting from this approach would only be accurate in a policy context wherein high income households renting in units affordable to very low and low income households could be replaced by households with income profiles that better matched those units' rents, a political impossibility. Australian researchers defining housing need respond by adding those units affordable to lower income groups but occupied by wealthier households to final estimations of need under a 30/40 approach (Hulse *et al.*, 2014), incorporating affordability and availability jointly. For similar reasons, the US government defines a unit as affordable and available to a household at a given income level 'if (1) it is affordable at that level and (2) it is occupied by a renter either at that income level or at a lower level or is vacant' (HUD, 2015).

Critics of 30% of income approaches contend that they significantly distort our understanding of the relationship between income, housing costs, and other household expenditures. These expenditures include transport and energy, specifically heating and cooling costs. Australian researchers have demonstrated that failure to account for these costs skews the picture of housing affordability within Australian metropolitan areas (Dodson & Sipe, 2008). Hulchanski (1995, p. 474) characterizes the evolution of the 30% rule as a "comedy of errors, all kinds of errors—conceptual, theoretical, empirical and methodological" that grew into a rule of thumb due to its simplicity. Recognizing the problems, Dolbear (1966) proposed a residual income approach that defines a housing unit as affordable to a household when that household can afford rent after meeting other basic needs. Stone most recently championed this approach in the U.S. context, refining a methodology that defines as "shelter poor" any household that cannot meet its non-shelter needs after accounting for

income and housing costs (Stone, 2006, p. 166). Academics have also applied the concept in Australia, relying on adequate budget measurements crafted by the Social Policy Research Center to define the basic non-shelter needs of a wide array of household types (Saunders & Bedford, 2017). Residual income based analyses reduce the number of singles and couples deemed in need and increase the number of larger families deemed in need (Burke, 2012). However, the data requirements for applying the residual income approach to estimating housing need far exceed the data requirements of applying 30% approaches, which may explain why the residual income approach has thus far failed to gain traction in policy circles (Stone *et al.*, 2011).

The 30% approach is not without its defenders, particularly in the UK. British scholars have advanced evidence that a hybridized approach between the 30% rule and the residual income approach may best capture the complexities of housing stress for homebuyers (Bramley & Karley, 2005). More recent work in the UK suggests that a 25% rule would most closely align to households self-reported housing stress there (Bramley, 2012), although these findings have not been replicated elsewhere to our knowledge. Academic debate over measures housing affordability remains unsettled, offering advocates and planners a menu of definitions to choose from when building needs assessments.

Adequacy and suitability

Efforts to define and meet housing need exclusively in terms of affordability and availability may fall short if they do not also consider the adequacy or suitability of new housing production with respect to the needs of existing households. This applies most obviously to unit size and overcrowding, but can also encompass adequacy with respect to disability, age, or other attributes of individuals and households. HUD has also defined adequacy with respect to quality: e.g. that a unit is not in disrepair or uninhabitable. The CMHC, in contrast, differentiates between the two: adequacy refers to a unit not requiring any repairs while suitability refers to a unit being appropriately sized with respect to number of bedrooms. In Britain, unsuitable housing refers to both families with children living on high floors of apartment buildings, as well as seniors or disabled residents occupying accommodation unsuitable to their specific needs (Bramley *et al.*, 2010). We begin this discussion by focusing on the most researched of these issues, overcrowding, and then briefly consider other aspects of adequacy and suitability. We ground our position that adequacy should play a role in formulating housing need in evidence that associates housing overcrowding with increased stress and blood pressure, poor mental and physical health, and developmental delay (Bashir, 2002; Evans & Kantrowitz, 2002).

Governments and academics measure overcrowding by comparing the number of residents in a household per bedroom against occupancy standards for habitability. Occupancy standards can assist planners in defining housing production needs by identifying households that can 'afford' their units only by crowding into small spaces, e.g. a four-person family sharing a one-bedroom apartment they can afford. Applying occupancy standards to changing household compositions can also assist in modeling anticipated housing need with respect to unit sizes.

Australian and Canadian policies both refer to the Canadian National Occupancy Standard (NOS) to identify households in need with respect to overcrowding (AIHW, 2017). The NOS offers a suitable bedroom size based on a formula that considers the number of adults, couples and children that assumes gendered separation of children after age five. British scholars deploy a similar definition, except for an assumption of gendered separation of children after age 10 (Bramley *et al.*, 2010). The United States, in contrast, lacks a single occupancy standard. American academics and policymakers generally define a unit as overcrowded when there is more than one resident per room and severely overcrowded in cases with more than 1.5 persons per room, where room means any kind of room (Econometrica, 2007).

Measuring and tracking adequacy with respect to habitability offers greater challenges for researchers and government. The CMHC relies upon residents' self-reporting on whether or not their homes require any repairs to define adequacy (CMHC, 2018). American researcher's most powerful housing research tool, the American Community Survey, does not ask habitability questions (U.S. Census Bureau, 2016), Matthew Desmond asserts that in the American context, policymakers and planners have pushed housing adequacy out of the policy agenda, much to the detriment of the poor in that country (Desmond & Bell, 2015).

Additional considerations: homelessness and emergency housing

The 'Three As' as we framed them do leave out important considerations for practice. Practitioners and academics also link availability to vacancy rates and the availability of temporary accommodation for specific groups of people like those sleeping rough and those escaping domestic violence. We find many jurisdictions develop needs assessments for these populations separate from overall affordability and adequacy needs, with these assessments grounded in separate literatures. Several conditions motivate this practice. First, programs serving these populations are not universally linked to general affordable housing programs in all three case studies, and programs that do exist may be managed in separate governmental departments. Second, the range of techniques used to estimate the size of the primary homeless population (those living on the street) and their needs may also explain the separation of homelessness from general population needs assessments. These approaches, from embedding counters into spaces occupied by homeless individual, and post count surveys (Hopper *et al.*, 2008), to repeated observation methods (Berry, 2007), are far more resource intensive and complex than a Census based analysis of need. Third, homeless people and survivors of domestic violence are assumed to have service needs beyond housing. That said, the choice not to incorporate these populations' needs into general needs assessments constitutes both a methodological and political choice.

Methods

We selected our three case studies from among the 10 least affordable housing markets in the world as measured by the median multiple, or the ratio between median income and median home price (Cox & Pavletich, 2018, p. 11). We selected examples

from three countries (Canada, Australia and the USA) to consider national variance in definitions and other assessment methods. Vancouver, with a center city population of 650,000, is the only Canadian city that made the bottom-ten list. Among American and Australian cities, we chose San Francisco because the population was similar to Vancouver (800,000, as opposed to bigger cities like New York or Los Angeles). We selected Greater Melbourne from Australia, as our research has been based there.

Within each case study we sought to include the broadest possible cross-section of studies or assessments identifying housing needs or shortfalls and published in the last decade. We searched the name of each city along with the phrases ‘housing shortfall’, ‘housing need’ and ‘housing shortage’ in Google’s search tool, along with the words ‘report’ and ‘study.’ We include studies produced by second tier (state/provincial), metropolitan and local governments and associated agencies, along with those produced by industry groups, affordable housing advocates, and academics.

For each study we conducted a desktop review that identified several key variables to use for our comparison. We searched for measures of backlog need, or need based on existing housing conditions and population, as well as forecasted need, or need specified in studies based on anticipated household growth. Based on our literature review, we then checked if each study accounted for each of the following aspects of housing need: affordability, availability, adequacy or suitability, and homelessness.

One limitation of our analysis concerns the varying geographic scope of the studies we identified. For two of our case studies, Melbourne and Vancouver, the cities constituted the only major population centers for their respective second-tier government. We thus included second-tier studies, even those that did not produce regional or local breakdowns. In these cases, we extrapolated the cities’ share of need through multiplying the study’s finding on state level need by the percentage of the state’s population residing in the city of interest.

Housing need assessments: three case studies

San Francisco: a limited local needs assessment leads to a limited steering

The City and County of San Francisco serves as the economic and cultural center of the broader San Francisco Bay Area, which contains 7.1 million residents. The city’s housing affordability challenges have accelerated since the end of the Global Financial Crisis, with median rents rising from \$2500 to over \$4000 a month for a two-bedroom unit (McCann, 2015). The city maintains a rent control ordinance that applies to all rental apartments in the city built before 1980, roughly 45% of the city’s total housing stock (City and County of San Francisco, 2015, p. A-12). City planners measure the loss of rent controlled apartments to demolition or condo-conversion along with the production of new affordable housing in annual reports (Weinberg, 2015). The city faces particular housing pressures from the rapid growth of its tech sector, whose presence is associated with hyper-gentrification and displacement of the city’s low income communities (Maharawal, 2014; McElroy & Szeto, 2017). These dynamics have contributed to the city having an increasingly unequal income distribution

(FRED, 2018), and the lowest percentage of children in any major US city (Fuller, 2017; Sankin, 2012).

San Francisco planners operate within a relatively generous affordable housing finance context. In 2017, San Francisco received over \$4 million in federal tax credit subsidies to fund affordable housing.¹ The State of California provides hundreds of millions of dollars in subsidies to support deed-restricted affordable housing (City and County of San Francisco, 2015). The city also raises funds for affordable and social housing through various mechanisms, including an inclusionary zoning ordinance, a hotel tax, and value capture from redevelopment. The 2014 Housing Element of the City's General Plan also specified an additional \$400 million in other federal and local funding sources to support the city in meeting its affordable housing production targets (City and County of San Francisco, 2015).

We identified four analyses of housing needs in San Francisco in our search, including analysis by local government, a management consultancy, an affordable housing advocacy group, and a state advisory body.

At eight-year intervals, each local government in California must update a Housing Element of its General Plan, using prescriptive state-mandated guidelines (for a detailed review see Ramsey-Musolf, 2016). This plan must contain a list of parcels that are appropriately zoned to meet a housing production target called a Regional Housing Need Allocation (RHNA). The RHNA consists of anticipated housing needs at four income points: very low incomes, low incomes, moderate incomes, and above moderate incomes. The plan does not include a target for extremely low income households, despite federal policymaking aimed at that demographic. These numbers are produced by state government by region, based on demographic forecasts. The Housing Element must also include policies and programs that will support meeting the targets. Failure to complete a Housing Element approved by the state exposes local governments to lawsuits from advocates that can freeze local development activities, but cities are not penalized for failing to build the allocated number of units (Western Center on Law & Poverty, 2017).

Based on work accomplished in 2013–2014, San Francisco received a formal RHNA allocation of 28,869 homes between 2015 and 2022. This amounts to targets for a 1% increase in dwellings per year. The overall target was as follows: 6234 very low income (22%), 4639 low income (16%), 5460 moderate income (19%), and 12,536 market rate (43%) (City and County of San Francisco, 2015, p. I-41). San Francisco's Housing Element report provides detailed estimates on the size of the homeless population (p. 50), amount of overcrowding (p. 45), and availability of units for special needs populations (p. 50–57), but these separate assessments did not feed back into either the RHNA targets or the mayor's construction targets. This led to inadequate consideration of existing housing gaps for extremely low-income households, such as the homeless, whom San Francisco counts separately and serves separately through a newly created department of Homelessness and Supportive Housing (DHSD, 2018).

Three other roughly concurrent needs assessments were developed by other stakeholders. The California Housing Partnership Corporation (CHPC), a state association for affordable housing providers, conducted its own needs analysis in 2014 (CHPC, 2014). It found that San Francisco faced an existing shortfall of 40,845 units

affordable to very low and extremely low-income households, more than six times more than the RHNA target. CHPC's report aligns with the 'gap methodology' approach discussed in the previous section (Aurand et al., 2017; Nelson, 1994). CHPC did not consider low and moderate-income households' needs, nor did it project needs into the future. CHPC excluded overcrowding from its methodology despite relying on a data source than can measure it, the Census Bureau's Public Use Micro Sample (PUMS) data (e.g. Myers *et al.*, 1996). Inclusion of any of these factors would raise CHPC's estimate substantially

Two years later, the McKinsey Global Institute produced a report claiming California needed to produce over 3.5 million homes (Woetzel *et al.*, 2016). Elected officials across the state have regularly referenced the report when advocating for major new legislation, including a recent bill that would override local land use controls near transit stations state-wide (Wiener 2018a, 2018b). McKinsey came to this conclusion by measuring how many homes would be necessary for the state's number of housing units per 1000 residents (358) to reach the average between New York and New Jersey (402 and 415) while absorbing anticipated household growth (Woetzel *et al.*, 2016, p. 2). Applying a proportional share of McKinsey's anticipated state-wide need to San Francisco would produce a needs assessment of 50,000 new units in the city through 2025. San Francisco has 431 units per 1000 people, a supply surplus relative to the rest of California as well as the comparison states. Yet McKinsey specifically identified sites to host over 70,000 additional units in San Francisco (Woetzel *et al.*, 2016, p. 19).

McKinsey referenced previous work completed by the Legislative Analyst's Office (LAO), a state agency that provides technical advice to the state legislature. The LAO produced its own measurement of the shortfall in housing need in 2015 (Taylor *et al.*, 2015) using an aggregate supply-based regression model relating home prices to new housing production nationally. This produced an 'ideal' estimate of 15,000 new units produced per year in San Francisco from 1980 to 2010, versus actual production of 2500 new units per year, creating a theoretical shortfall of 367,500 units. In other words, San Francisco would need to have doubled its current number of roughly 370,000 units in those 30 years, according to this supply-side affordability formulation. Local media coverage highlighted the study as evidence of the overwhelming importance of boosting supply in reducing cost (Scheinin, 2015; Winberg, 2015). Neither McKinsey nor the LAO reports included affordable housing need by income tranches.

Then-Mayor Edwin Lee responded by setting a goal for the city to produce 30,000 new or rehabilitated units by 2020, 10,000 of which would be permanently affordable for low to moderate income households (Lee, 2014). This was 800 units fewer than the combined RHNA targets for those groups and considerably below the CHPC needs assessment. A citizen jury assessed the Mayor's targets and concluded that programs laid out by the city to meet these targets could succeed, but that meeting the targets would not 'resolve the housing affordability crisis', although it 'will provide relief for a limited number of citizens and help to sustain a level of economic diversity' (Civil Grand Jury, 2014, p. 2). The jury repeatedly emphasized its preference that the city prioritize affordable housing production over market-rate production (Civil

Grand Jury 2014, p. 2, 12, 15). The mayor issued a further executive directive in 2017 raising the city's production goal to 5000 units per year and directing city agencies to ensure reviews of planning documents were completed under target timeframes (Lee, 2017). This directive did not dictate income distribution of the expanded production targets. As of 2018, San Francisco appears on track to meet its 'Housing Balance' targets between market rate and subsidized housing (Rahaim, 2017), although they fall well short of the city's enormous need.

Vancouver: an ambitious local needs assessment scaling up policy steering

The City of Vancouver functions as the economic center of a larger region, Greater Vancouver, which is home to over 2.8 million residents. Vancouver experienced a near doubling of home prices between September 2008 and December 2016 (McElroy, 2018). Incomes stagnated during this period, making Vancouver the most expensive city in North America, in terms of the median house price to median household income multiple (Cox & Pavletich, 2018).

Canada's federal government began jettisoning its commitments to social housing in the 1990s, transferring responsibility to provinces and territories while reducing financial support for the sector (Suttor, 2016). Canadian scholars conceptualize this as part of a broader transfer of risk in Canadian housing systems from the federal government to the private sector and, ultimately, private households (Walks & Simone, 2016). Researchers also link Vancouver's housing affordability crisis to investment-driven immigration, mostly from China. The Canadian government's Business Immigration Program (BIP) brought hundreds of thousands of wealthy investor-migrants to Canada's only west coast major city, exacerbating housing speculation (Ley, 2017). At the zenith of the boom, local analysts found Chinese buyers made over two-thirds of home purchases in the city's affluent west side (Gold, 2015). Local scholars now refer to China as a new 'fundamental' of housing economics in the city, as important as interest rates (Todd, 2018). In this context, Vancouver has come to have the lowest rate of children of any city in Canada, with upwards of 58% of families telling the city they are considering leaving due to housing affordability and other challenges (City of Vancouver, 2015; Sherlock, 2016). Vancouver has also witnessed a large increase in income inequality over the past decade (Fong, 2017).

Vancouver housing planners face these challenges with some new supports, including renewed investments in social and affordable housing from the provincial and federal government. Since 2011, British Columbia has received over \$240 million in federal support through federal programs, with the province providing \$355 million in matching funds (Whitzman, 2018). A new federal government in 2015 is beginning to reverse decades of under-investment, committing \$40 billion over the 2016–2026 period to affordable housing provision, with a goal of 530,000 new or renovated dwellings across the country. After a 2017 provincial election where housing affordability was key, the new BC government introduced a \$500 million Investment in Housing Innovation program (BC Housing, 2018). The local government has also developed innovative forms of value capture and use of land assets to fund affordable housing, and appears cautiously optimistic about the first time all three levels of

government are relatively aligned in terms of affordable housing policy in 30 years (Whitzman, 2018, p. 20).

We discuss four plans, including two successive local government plans, both underpinned by need assessments. In addition, there was a regional need assessment and a state-wide affordable housing need assessment provided by a non-profit advocacy group.

Vancouver has a strong history of research-informed action on affordable housing (Whitzman, 2018). The City of Vancouver produced a Housing and Homelessness Strategy in 2012 that was intended to span nine years to 2021 (City of Vancouver, 2012). That document called on local government to produce or facilitate 2,900 units for very low-income households with associated social supports. This was intended to meet the needs of an increasing homeless population, estimated at 1,605 by using street counts (p. 7). The plan acknowledged declining market rate multifamily apartment production since the 1980s, but did not specify market rate rental production targets. It did, however, undertake an ambitious set of private developer incentives for transit-oriented build to rent, that produced over 7,000 units in six years (City of Vancouver, 2017).

The city updated the strategy with more ambitious and comprehensive targets in 2017. There is an overall target of 72,000 new units between 2018 and 2027 (City of Vancouver, 2017, p. 22). The city categorizes these 72,000 units by tenure type, building type and affordability level. The city aims to support the construction of 36,000 rental units, a third of which will be non-market or social housing (p. 22). The remainder will be purpose built rental housing for households on the lower end of the income distribution.

Vancouver builds on a strong need assessment evidence base and produced its targets based on a normative approach to housing policy that prioritizes retaining the current income mix, shifting production towards rental housing, and prioritizing rental housing affordable to very low-income households (City of Vancouver, 2017, p. 22). The city also provides more specificity in income targeting, delineating its housing production goals into six income bands rather than the four used in San Francisco. The city allocates 7% of their targets to households earning 0–\$15,000 a year (5,200), 2% to households earning \$15,000–\$30,000 (1,600), 6% to households earning between \$30,000–\$50,000 (4,500), 37% to households earning \$50,000–\$80,000 (23,500), 37% to households earning \$80,000–\$150,000 (26,200), and the remaining 15% (11,000) to households earning more than \$150,000 (p.22). The city frames these targets as an orientation toward “Right Supply” based on current demographics (p. 21). The City government thus suggests that there may be an over-supply of luxury homes in relation to affordable housing.

A year earlier, Greater Vancouver’s regional government produced its own needs assessment for the region, proportionally assigned to the 28 local governments in the region. This needs assessment concluded that the City of Vancouver needed 12,000 additional rental units, to meet anticipated housing need (Metro Vancouver, 2016). Metro Vancouver produced these estimates through standard demographic modeling that appeared to disregard existing affordability and availability gaps. Metro Vancouver allocated 5910 units (49%) to very low-income households, 2340 units (20%) to low income households, 1930 units (16%) to moderate income households,

and the remainder (14%) for higher-income households (Metro Vancouver, 2016, p. 38). This contrasts sharply with the City of Vancouver's target of producing 12,000 below-market rentals and 24,000 market rentals.

The British Columbia Non-Profit Housing Association (BCNPHA) led a coalition of affordable housing advocates to develop an *Affordable Housing Plan for British Columbia*, intended to influence the state election of 2017 (BC Rental Housing Coalition, 2017). Their modeling included both the existing shortfall of units affordable and adequate for low income households and projections for additional need between 2016 and 2026. They estimate the existing shortfall through traditional demographic modeling (low income households as compared to affordable homes) and project it at just above 54,000 affordable units for Greater Vancouver (BCNPHA, 2012, p. 1). They forecasted a need for an additional 48,050 affordable homes for the metropolis through 2036 (p. 2). Allocating these number proportionately to the city puts BCNPHA's assessment of need for the City of Vancouver at 26,233 units, 12,319 of which come from backlogged existing need and 12,913 from anticipated need. Their figure is considerably below City of Vancouver's current targets. The provincial advocacy needs assessment was successful in being adopted by the new government as the basis for their housing action plan (Whitzman, 2018, p. 23–25), albeit one less ambitious than that of the City of Vancouver.

The City of Vancouver, in summary, has developed production targets for both affordable and market rate units that exceed need assessments provided by regional government and even by affordable housing advocates. Whether these ambitious targets will be met, even with new mechanisms and funding sources, remain to be seen.

Melbourne: ignoring local needs assessments leading to incapacity to steer policy

Compared to San Francisco and Vancouver, Melbourne has a very weak form of local governance. A right-wing state government dismissed, then amalgamated local governments in 1995, leaving the Melbourne region with 31 new local governments, all with very weak regulatory powers (Buxton *et al.*, 2016). As the City of Melbourne contains only 150,000 of the region's 5 million inhabitants, its housing policies are not discussed in this article. The Melbourne region also differs from that of Vancouver and San Francisco in constituting 80% of its second-tier government's population of 6.3 million, making state government assessments, targets and policies the focus of this section.

From 1972 to 1988, the State Government of Victoria directly controlled suburban housing development for affordability outcomes through an Urban Land Authority (Gleeson & Coiacetto, 2005). The capacity to provide affordable housing was also affected by dissolution of local government-owned affordable housing companies as part of the neo-liberal political project of local government amalgamation and accompanying privatization in the mid-1990s. In the past 20 years, the Australian government commitment to affordable housing development has been weaker than the US or Canada, with the exception of a limited post-GFC suite of programs to boost affordable housing supply, abandoned by 2014. Currently federal funding for new

social and affordable housing supply is negligible (Gurran & Phibbs, 2015). The State Government introduced an affordable housing strategy in 2017 that included \$1 billion in funding and another billion in loan support (SGV, 2017a). But it did not provide a legal definition of affordable housing, including income tranches, until the middle of 2018 (Whitzman, 2018).

We found a larger number of recent housing need assessments for Metropolitan Melbourne than the two other case studies: four commissioned by state government, and two undertaken by researchers.

A new Victorian state government was elected in 2014. One of its first actions was to create an independent advisory body to develop a 30-year infrastructure strategy. This strategy recommended ‘investing in social housing and other forms of affordable housing for vulnerable Victorians to significantly increase housing supply’ as one of its three top infrastructure priorities (Infrastructure Victoria, 2016, p. 43). Their needs assessment estimated ‘75,000 to 100,000 vulnerable low-income households not having their housing requirements met’ across the state. The figure was based on limited data: 30,000 households on the waiting list for public housing plus 120,000 in the private rental market receiving Commonwealth Rental Assistance who are in housing stress, ‘of which 50,000 are in very lowest income bracket’ (there would be a considerable overlap between these 50,000 households and the 30,000 on the waiting list for public housing), also noting ‘10,000 [public housing] properties nearing obsolescence’ (p. 98). The advisory body recommended a relatively modest social housing target of 30,000 new ‘affordable’ dwellings over the next 10 years, and the relationship between the needs assessment and the recommended target was not explained (p. 104).

Three months later, in February 2017, the State Government simultaneously produced its first affordable housing strategy, *Homes for Victorians* (SGV, 2017a), and its sixth 30-year metropolitan plan in as many decades, *Plan Melbourne* (SGV, 2017b). *Plan Melbourne* referred to forecasts estimating that Victoria would need to add roughly 950,000 aggregate dwellings between 2016 and 2036 to accommodate anticipated population growth, a rate of 47,700 units per year (Sykes, 2016). The plan did not convert these demographic forecasts into need assessments or production targets by income band, and the plan explicitly linked increased housing production to the need for less restrictive zoning in the central city (SGV, 2017b, p. 49). *Homes for Victorians* provided a target for social housing: ‘renewing’ (by which they meant tearing down and replacing) 2500 public housing units and additional new build to total 4700 units by 2022 (SGV, 2017a, p. 31). Neither report referred to the Infrastructure Victoria estimations of needs or suggested targets.

Neither report referred to a state government- commissioned needs assessment which was released in May 2017, three months after the two strategic plans, but commissioned to inform the affordable housing strategy (SGV, 2017c). This report noted that the state’s existing social housing stock constituted 3.5% of total housing units and applied that proportion to the estimation of population growth to produce a target of 1700 additional social housing units per year, or 34,000 units over the period between 2018 and 2030 (SGV, 2017c, p. 3).

Three years earlier, the same group of researchers who produced the background report delivered a stronger needs assessment with respect to affordability (Hulse

et al., 2014). They conducted a gap analysis that accounted for the availability of units affordable to very low-income households (defined as the bottom fifth of households in Australia by income) and low income households (those between the 20th and 40th percentile of national incomes). They concluded that Greater Melbourne faces a shortage of 51,800 units for very low-income households (p. 74), and 20,400 units for low income households (p. 76), for a total need of 72,200 units, not including population growth.

Most recently, Lawson *et al.* (2018) provided an analysis measuring Greater Melbourne's social housing need at over 127,000 units (p. 4). Lawson's numbers include the estimated size of the homeless population in the region, unlike Hulse *et al.* (2014). Instead of conducting a gap analysis, Lawson *et al.* measured social housing need as a combination of three types of need: met need, or current social housing resident, manifest need, or current and future need to accommodate the homeless, and evident need, the sum of all households in the bottom quintile of the national income distribution who are in rental stress. Lawson *et al.*'s more direct approach picks up households who are housing stressed despite paying rents within their affordability bandwidth. Consider a household with an income at exactly the 16th percentile living in a unit that rents at 30% of the 19th percentile income. Hulse and Yates' approach, as well as most American approaches reviewed here, would not consider this household in need while Lawson *et al.*'s approach would. Lawson *et al.*'s projections of future need assume the overall income distribution of the population remaining constant (Lawson *et al.*, 2018, p. 62).

In sum, multiple state agencies in Victoria have instead produced limited and conflicting estimates of needs, that have thus far failed to influence very limited affordable housing targets. Victorian academics, meanwhile, have engaged in a detailed and through research on housing need, virtually ignored by a state government reluctant to steer housing policy.

Discussion: the social construction of housing needs modeling

We summarize the methodologies of each study in Table 1, which highlights how unevenly policy actors have utilized academic conceptualizations in their efforts to construct housing problems. The extremely low income category and data on homelessness do not inform housing targets in San Francisco or Melbourne, despite information on the critical needs of these populations. Backlog affordable housing need is not addressed in San Francisco or Melbourne policy, despite existing research establishing shortfalls, and addressing the current shortage of affordable housing is not addressed explicitly in Vancouver policy. Overcrowding is not considered in San Francisco, despite local data being generated, and availability of less expensive units to lower income households is ignored in all three cities' policies.

The results in Table 1 highlight the efforts of stakeholders to define local housing shortages in terms beneficial to their agendas, selectively legitimating conceptualizations of housing need to fit their purposes (Flyvbjerg, 2002). Most affordable housing advocate assessments rely on some variation of the gap methodology to highlight large shortages of affordable housing. Industry bodies and state agencies concerned

Table 1. Summary of examined housing needs assessments.

Name	Year	Stakeholder	Target or assessment	Market rate need	Backlog need	Included elements of need				Methodological comments
						Affordability	Availability	Adequacy	Homeless	
San Francisco	2014	City	Target	Yes		30% Rule	Yes	Yes		No explicit methodology. Demographic modeling. Gap or shortfall analysis by income cohort. Comparison to New York and New Jersey units per 1,000 people. Based upon unpublished regression analysis.
	2014	Regional Agency	Assessment	Yes		30% Rule				Demographic modeling. Gap or shortfall analysis by income cohort. Comparison to New York and New Jersey units per 1,000 people. Based upon unpublished regression analysis.
	2014	Advocates	Assessment		Yes	30% Rule	Yes			Demographic modeling. Gap or shortfall analysis by income cohort. Comparison to New York and New Jersey units per 1,000 people. Based upon unpublished regression analysis.
	2016	Consultant	Assessment	Yes						Demographic modeling. Gap or shortfall analysis by income cohort. Comparison to New York and New Jersey units per 1,000 people. Based upon unpublished regression analysis.
	2015	State Agency	Assessment	Yes						Demographic modeling. Gap or shortfall analysis by income cohort. Comparison to New York and New Jersey units per 1,000 people. Based upon unpublished regression analysis.
Vancouver	2016	City	Both	Yes	Yes	30% Rule	Yes	Yes	Yes	No explicit methodology. Demographic modeling. Gap or shortfall analysis by income cohort. Comparison to New York and New Jersey units per 1,000 people. Based upon unpublished regression analysis.
	2017	Regional Agency	Assessment	Yes	Yes	30% Rule	Yes	Yes	Yes	Demographic modeling. Gap or shortfall analysis by income cohort. Comparison to New York and New Jersey units per 1,000 people. Based upon unpublished regression analysis.
	2017	Advocates	Assessment	Yes	Yes	30% Rule	Yes	Yes	Yes	Demographic modeling. Gap or shortfall analysis by income cohort. Comparison to New York and New Jersey units per 1,000 people. Based upon unpublished regression analysis.
Melbourne	2016	State	Assessment	Yes		30% Rule		Yes		Demographic modeling. Gap or shortfall analysis by income cohort. Comparison to New York and New Jersey units per 1,000 people. Based upon unpublished regression analysis.
	2017	State	Target			30/40 Rule			Yes	No explicit methodology. Demographic modeling. Gap or shortfall analysis by income cohort. Comparison to New York and New Jersey units per 1,000 people. Based upon unpublished regression analysis.
	2017	State	Assessment	Yes						Demographic modeling. Gap or shortfall analysis by income cohort. Comparison to New York and New Jersey units per 1,000 people. Based upon unpublished regression analysis.

(continued)

Table 1. Continued.

Name	Year	Stakeholder	Target or assessment	Included elements of need				Methodological comments
				Market rate need	Backlog need	Affordability	Availability	
Infra. Vic.	2016	State	Both			30/40 Rule		Public Housing waitlist plus rent burdened households.
State to 2036	2017	State	Both					Keeping social housing at 3.5% of stock plus demographic modeling.
Lawson et. al.	2018	Academic	Assessment		Yes	30/40 Rule	Yes	All rent burdened bottom quintile households in need.
Hulse & Yates	2014	Academic	Assessment		Yes	30/40 Rule	Yes	Gap or shortfall analysis by income cohort.

about aggregate supply, in contrast, adopt income-neutral approaches that legitimate further de-regulation of housing policy in aid of growth machine politics. McKinsey's overtly simplistic assessment typifies this approach, making it unsurprising that San Francisco's state senator drew repeatedly and almost exclusively from McKinsey's claims in his bid to champion zoning deregulation there (Wiener, 2018a, 2018b).

Deconstructing positivist definitions of housing problems requires a detailed consideration of the assumptions of such work (Fopp, 2008), and housing needs assessments are no exception. Practitioners forecasting future need in all three countries, for example, almost universally assumed that the future population's income distributions would match the existing income distribution, without rationalizing this choice. They rely on this assumption despite evidence of increasing unevenness in the income distributions of at least two of the case studies, Vancouver and San Francisco (Fong, 2017; FRED, 2018). More importantly, few studies contend with the impossibility of their claims, such as California's LAO arguing that San Francisco needed to double its housing stock over a 30-year period to stay affordable relative to the rest of the United States.

Our deconstruction of the 'industry science' of supply shortages is not an endorsement of any specific government approach, including Vancouver, who at least provide the most detailed analysis in terms of income tranches. Government assessments of housing need derived from traditional demographic modeling lend themselves to incremental policies. Metro Vancouver and the State of California both suggest aggregate housing production targets that equate to 1% of existing stock per annum. The senior governments in each case study conveniently ignore affordable housing backlog, the sum of existing core need, and the increasing effects of tech sector employment growth (San Francisco) and foreign investors (Vancouver).

Data availability appears to play a role in constraining stakeholder's construction of housing need. The only studies to fully consider affordability, availability and adequacy came from Vancouver, whose stakeholders benefit from the existence of a National Housing Survey that measures these concepts. Australia lacks anything like a National Housing Survey and, unsurprisingly, considerations of crowding and adequacy are excluded from studies of need in Melbourne.

Finally, what Hulchanski calls the 'comedy of errors,' the 30% rule (Hulchanski, 1995), still forms the basis of housing needs assessments in each country, despite the existence of a detailed critique and a rigorously researched alternative. Practitioners in each city continue to rely on a definition of affordability that shifts the understanding of housing needs in each city towards singles and away from families with children (Burke, 2012). This practice persists despite evidence of decline in families with children in both Vancouver and San Francisco due, in part, to housing affordability challenges (City of Vancouver, 2015; Sankin, 2012).

Conclusions: from social constructs to policy targets

This article reveals the hidden assumptions, data constraints, and implausibility of major housing needs assessments in three countries. Yet our case studies also demonstrate how housing needs assessments can become 'truth,' and how their contestable numerical declarations can become legitimized by political actors who sculpt them

into policy targets, in line with social constructionist thinking (Jacobs & Manzi, 2003). In doing so, this article reveals the unstable ground on which needs assessments that inform government housing targets stand. Just as focusing on aggregate supply shortages (whether actual or not) becomes a powerful political tool in arguing for less planning ‘red tape’, so too can methodological weakness in assessments function to mask the housing needs of poor people.

San Francisco highlights the pitfall of relying on ‘business as usual’ demographic modeling in measuring housing need. The mayor essentially repurposed a non-binding, incremental housing needs allocation from the state as ambitious housing production goals. The mayor subsequently expanded these targets, yet they remain far below the assessed backlog need identified by housing advocates. The citizens jury in San Francisco acknowledged that a dramatic increase in supply might reduce prices, but they instead argued that the government should focus on increasing permanently affordable supply in line with the normative values of economic diversity and social inclusion (Civil Grand Jury, 2014).

The example of the Victorian State Government, responsible for planning Greater Melbourne, demonstrates how the lack of a common language of needs assessments can weaken policy focus and goal setting. The state government’s choice to model the social housing production requirements in terms of what it would take to keep social housing from dropping below 3.5% of the total stock, and then to release this needs assessment after the strategy, reflect what Gurran and Phibbs (2015) describe as a policy path of least resistance taken by governments in Australia. This contrasts with a rigorous conceptual and empirical debate on housing needs among Australian scholars that has yet to be legitimated by the multiple government agencies measuring the problem there.

In Vancouver, the local government developed its own needs assessment, informing a relatively radical policy. Of our three case studies, Vancouver’s need assessment came close to incorporating affordability, availability and adequacy or suitability, owing to the availability of federal data sources like the National Housing Survey (CMHC, 2018). Vancouver City Council appears to have completely rejected the notion that increased aggregate supply will reduce prices. The city’s targets instead reflect normative aspirations to promote and defend economic diversity in the city by allocating targets by both income levels and tenure. Its affordable housing needs numbers, which double as its targets, exceed both regional government and affordable housing advocate estimates of need. Yet Vancouver also highlights the potential for stakeholder needs assessments to guide policy, as the provincial government essentially adopted advocates’ needs modeling as the basis of its own policy efforts (Whitzman, 2018, p. 23–25).

We conclude by arguing for the importance of needs assessments in informing good government policy. In San Francisco, a mayor embraced weak needs assessments as goals for local policies. In Vancouver, stronger needs assessments assist the political project of improved (although hardly excellent) policy. In Melbourne, ignoring excellent needs assessments shows how reluctant state government is to actually steer affordable housing outcomes. In all three cases, knowing the extent of the affordable housing gap would be a necessary first step in solving the problem.

Note

1. <http://www.treasurer.ca.gov/ctcac/2017/estimates.pdf>

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