

10-9-2017

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Recommended Citation

Gabbe, C. J. (2018). How do developers respond to land use regulations? An analysis of new housing in Los Angeles. *Housing Policy Debate*, 28(3), 411–427.

This is an Accepted Manuscript of an article published by Taylor & Francis in *Housing Policy Debate* on Oct. 9, 2017, available online:
<http://www.tandfonline.com/10.1080/10511482.2017.1368031>.

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How Do Developers Respond to Land Use Regulations?

An Analysis of New Housing in Los Angeles

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Introduction

Economists, urban planners, and environmentalists argue for urban densification, but certain land use regulations may stand in the way. Some zoning requirements may hinder new housing production while other provisions may be largely symbolic (Glaeser & Ward, 2009; Kok, Monkkonen, & Quigley, 2014; Landis, 2006; Quigley & Raphael, 2005; Quigley & Rosenthal, 2005). This paper fills a gap in the scholarly literature about how real estate developers respond to different kinds of land use regulations.

One way to understand how regulations matter is to compare regulatory requirements with the actual characteristics of new buildings. I focus on recent residential developments in Los Angeles's Vermont/Western specific plan area, the city's first modern transit-oriented development plan (City of Los Angeles, 2001). I concentrate on rail transit because Los Angeles, like many cities, aspires to concentrate growth near transit to achieve benefits related to housing affordability, transportation efficiency, and climate change mitigation (City of Los Angeles, 2013b, 2015b).

I analyze developers' responses to a plan that generally eased local density restrictions and parking requirements, and added new design standards. I then compare the Vermont/Western results with those in nearby Koreatown, a neighborhood with rail transit but no specific plan. To supplement the building analysis, I interview nine experts with planning or development experience in and around the study area.

I find that (1) developers are commonly constrained by density limits and parking requirements, and (2) regulatory implementation matters as much as – or more than – the written regulations themselves. In both the Vermont/Western and Koreatown areas, residential development routinely met or exceeded key baseline zoning limits. The average development in

Vermont/Western was built to 112% of the baseline allowable residential density and included 94% of the baseline required parking. The average development in nearby Koreatown was built to 99% of the allowable density and included 88% of the required parking. Many developers received permission from the city to build more densely and with less parking than baseline land use regulations allow. But, there was variation depending on whether the development was affordable or market-rate; apartment or condominium; small or large; or residential-only or mixed-use.

If policymakers aim to focus growth near transit, I recommend that cities carefully examine the effects of direct and indirect density limits, and development approval processes.

Zoning provisions commonly shape residential development

Local governments regulate many dimensions of the built environment, including land use, density, height, parking, setbacks, lot coverage, and design (Deakin, 1989; Downs, 1992). Regulatory provisions can be viewed as a ceiling or floor imposed by the government (Bertaud & Brueckner, 2005; Manville, 2013). But, that ceiling or floor may or may not be an actual constraint. Alonso (1964) noted that zoning is only a binding constraint if it mandates minimum lot sizes, for example, that are larger than the market would otherwise produce. Thus, an important question is how regulatory ceilings and floors affect real estate development.

Overall regulatory restrictiveness

Scholars have focused on between-city (Chakraborty, Knaap, Nguyen, & Shin, 2010; Glaeser & Ward, 2009; Ihlanfeldt, 2007; N. Levine, 1999; Pendall, 2000; Quigley & Raphael, 2005) or between-metropolitan (Mayer & Somerville, 2000) effects of regulatory stringency.

Land use regulations have been largely tied to reduced housing production and higher housing prices (Glaeser, Gyourko, & Saks, 2005; Glaeser & Ward, 2009; Ihlanfeldt, 2007; Pendall, 2000; Saks, 2008). In California – a state known for its extensive system of land use and environmental regulations– restrictive regulations have been associated with higher land prices (Kok et al., 2014), home prices (Kok et al., 2014; N. Levine, 1999; Quigley & Raphael, 2005), and rents (N. Levine, 1999). Some regulations, however, are “symbolic, ineffectual, or only weakly enforced” and seem to have little effect on housing production or prices (Quigley & Rosenthal, 2005, p. 69). Landis (1992, 2006), for example, matched pairs of California communities and concluded that local growth control and management programs had modest or no effects.

Specific zoning provisions

An important hypothesis is that developers would prefer to build more housing than is currently allowed (J. Levine, 2006). There are several approaches to testing this hypothesis. One is directly comparing zoning requirements and building characteristics. Direct measures of zoning include minimum allowable lot size (Glaeser & Ward, 2009), minimum parking requirements (Manville, 2013) or the presence of adopted overlay zones (Atkinson-Palombo, 2010). Several scholars have compared the actual density of development with the allowable density, and then followed with regression models to explain the determinants of actual density (Cai, Wang, & Zhang, 2017; Kopits, McConnell, & Miles, 2012; McConnell, Walls, & Kopits, 2006).

Density limits may constrain some types of residential development, but is dependent on the interaction between regulations, market factors, and/or political conditions. McConnell et al. (2006) and Kopits et al. (2012) found that in the Maryland suburbs of Washington D.C., a small

share of developments were built to the minimum lot size limit, and regulations seem to be a constraint in areas with the largest lot zoning. Cai et al. (2017) analyzed a sample of recent developments in China and found that about 20% of developments exceeded baseline floor area ratio limits, and this was likelier in attractive locations and for development projects where there were ties between the developer and local government officials.

Minimum parking requirements have been shown as a development constraint in the adaptive reuse of commercial buildings in downtown Los Angeles (Manville, 2013), residential development in Queens, New York (McDonnell, Madar, & Been, 2011), and new housing in London (Li & Guo, 2014). These scholars generally took one of two nested approaches. McDonnell et al. (2011) compared the amount of parking built with the amount that was required in the zoning. Others did the same, and then followed with regression models to examine factors associated with parking provision (Li & Guo, 2014; Manville, 2013).

Developers' responses to parking regulations may be site- and project-specific. Developers, particularly those with small lots or in urban environments, can come to more efficient solutions if given flexibility in terms of parking requirements and/or are allowed to provide parking nearby off-site (Manville, 2013; Shoup, 2005). Parking deregulation may have a bigger effect when it allows a developer to reduce development costs, such as going from two levels to one level of underground parking, or moving parking from on-site to off-site (Manville, 2013).

Real estate developer can exceed baseline regulations in a variety of ways. Developments may deviate from baseline regulations through incentives, conditional use permits, variances, and zoning code amendments (Hoch, Dalton, & So, 2000). Incentive zoning refers to additional density that cities grant in exchange for a public benefits provided by the developer (J. Levine,

2006). Incentive zoning is based on the idea that the social and environmental costs of new housing development, beyond a certain point, should be offset by new public benefits (Feiock, Tavares, & Lubell, 2008).

Regulatory deviations may show that baseline regulations are a development constraint or that offered incentives are too lucrative to pass up. Levine (2006) explained that the “use of incentive zoning itself is additional evidence of the extent to which the private development market desires to develop more densely than conventional zoning allows” (pp. 115-116). But, in another scenario, incentives are easily procured and/or developers view the value of incentives as exceeding the cost of providing required social or environmental benefits (Feiock et al., 2008). The latter might be a symptom of an ad hoc zoning and approval system, but not necessarily that regulations are a binding development constraint.

Transit-oriented development implementation

Transit-oriented development (TOD) can be broadly defined as mixed-use development within a short distance of a public transit facility (Cervero, Ferrell, & Murphy, 2002). TOD is intended to increase transit ridership, reduce road congestion and vehicle emissions, promote neighborhood investment, and support affordable housing development (Federal Transit Administration, 2017). TOD has been the subject of considerable research; most scholars have focused on how TOD affects travel behavior, particularly whether transit proximity reduces auto travel (Boarnet, 2011; Ewing & Cervero, 2010). A smaller body of literature examines the conditions necessary to build TOD.

There is widespread agreement that the presence of rail transit alone will not automatically translate into development near local stations (Bartholomew & Ewing, 2011;

Bernick & Cervero, 1997). A combination of conditions are necessary for new TOD, and the importance of land use regulation relative to other factors is not completely clear. Supportive regulations are necessary, along with a strong regional economy, population growth, developable land, and favorable station area locational characteristics (Bernick & Cervero, 1997; Cervero, 1984; Gomez-Ibanez, 1985; Knight & Trygg, 1977; Loukaitou-Sideris, 2010). Loukaitou-Sideris (2010) attributed the popularity of TOD in Los Angeles to a combination of regional growth, rising housing prices stemming from insufficient housing supply to meet demand, worsening road congestion, the rising cost of driving, and environmental factors.

While cities and regions increasingly aspire to focus growth around public transit, there are often widespread disconnects between broad policy goals and local regulations (Barbour & Deakin, 2012; Boarnet & Crane, 2001). In the 1990s, for instance, the majority of rail station areas in southern California did not even allow residential uses (Boarnet & Crane, 1997). Some municipalities have adopted policies intended to encourage TOD construction including mixed-use zoning, allowing higher densities by-right, reforming off-street parking regulations, density bonus incentives, performance zoning, interim zoning, floating zones, minimum density classifications, planned unit developments, specific plans, and transfer of development rights (Cervero et al., 2002; Loukaitou-Sideris, 2010; White & McDaniel, 1999). Local governments may also subsidize transit-oriented development through infrastructure investments, assist with land assembly or become equity partners in development projects (Cervero & Landis, 1997).

Explaining developer responses to land use regulations

The research described above suggests a variety of possible constraints to new development. But, we do not know much about how different regulations, or combinations of

regulations, shape the characteristics of residential development. Despite scholars' increased focus on transit-oriented development, we have much to learn about which regulations matter for TOD implementation. This paper fills these gaps by analyzing how site, neighborhood, and regulatory characteristics interact to shape new multifamily housing.

Los Angeles and its transit-oriented development

Los Angeles is the second largest American city, with more than 3.9 million residents spread over 469 square miles, and is the center of a metropolitan region of over 18 million people (United States Census Bureau, 2014). Although there is a cultural stereotype that Los Angeles is a city of sprawling single-family homeowners, over 60% of Los Angeles's 1.3 million households live in attached housing, and about 63% are renters (United States Census Bureau, 2014). Los Angeles is growing; between 2000 and 2014, developers built more than 92,000 new housing units, of which 71% were multifamily and 68% were rental units (United States Census Bureau, 2014). These citywide figures illustrate a trend toward attached and higher density housing. Meanwhile, Los Angeles has been building out a regional rail transit network; the metropolitan area now has 93 rail transit stations on 6 lines covering 105 miles, with several new or expanded lines in the planning or development phases (L.A. Metro, 2016b, 2017).

Local, regional, and state TOD policies

Los Angeles's local and regional policymakers have approved plans to focus residential growth near "high quality" public transit, generally defined as rail transit and buses that run at least every 15 minutes during peak commute periods (Barbour & Deakin, 2012; City of Los Angeles, 2015b; Southern California Association of Governments, 2016). This has partially been

a response to California’s Sustainable Communities and Climate Protection Act of 2008 (known as SB 375), which aims to reduce auto-related greenhouse gas emissions through regional coordination of land use, transportation, and affordable housing (Steinberg, 2008).

Incentives for affordable housing

Los Angeles’s density bonus incentives also play an important role in how land regulations are implemented, including in transit-oriented developments. A 1979 state law requires cities to provide density bonuses and other incentives to developers that provide affordable housing (State of California, 1979). Los Angeles adopted an ordinance to implement this law in 2008 (City of Los Angeles, 2008). The city grants density bonuses of up to 35% based on how much affordable housing is provided and the targeted income groups. Density bonuses can be provided to affordable developers or market-rate developers who include some income-restricted units. Affordable housing developers have used the incentives more than market-rate developers (Los Angeles City Controller, 2017).

The density bonus ordinance offers several incentives for developers. Density bonus developments automatically qualify for reduced parking requirements. Additionally, developers may choose from one to three “on-menu” incentives related to yards/setbacks, lot coverage, lot width, floor area ratio, height, and open space (City of Los Angeles, 2008). The city’s planning commission may also grant developers “off-menu” incentives that go beyond the on-menu ones listed above (City of Los Angeles, 2008, p. 14).¹

¹ The off-menu incentives are more rarely used. These incentives must be approved by the city planning commission and are non-appealable.

Vermont/Western transit-oriented plan

The Vermont/Western Transit Oriented District Specific Plan (VWSP) was adopted in 2001 as Los Angeles's first modern neighborhood-scale plan around rail transit.² The 2.2 square mile plan area has about 55,000 residents and 29,000 employees (Chatman et al., 2016). It is home to several hospitals and the main campus of Los Angeles City College (Chatman et al., 2016). The plan area is centrally located northwest of downtown L.A., north of Koreatown, east of Hollywood, south of Los Feliz, and west of Silverlake. The largest part of the plan area is covered by the East Hollywood neighborhood council, although the VWSP boundaries include parts of six other neighborhood councils (City of Los Angeles, 2013c).

The plan area includes four Metro Rail Red Line transit stations between downtown Los Angeles and Hollywood. These stations opened in 1999 and compose 4 of the 14 stations on the Red Line (L.A. Metro, 2016b). The stations are named for their street intersections: Vermont and Beverly, Vermont and Santa Monica, Vermont and Sunset, and Hollywood and Western (Los Angeles Metro, 2016a). The Red Line partially overlaps with the Purple Line, though not for the stations in the VWSP area. The Purple Line connects downtown Los Angeles with Koreatown, and the Red Line connects downtown with North Hollywood via Hollywood and Universal City (Los Angeles Metro, 2016b). The two lines had a combined ridership of over 45 million annual boardings in 2016, making them the highest ridership lines in Los Angeles (L.A. Metro, 2016a).

The VWSP is a useful case study for four reasons. First, the plan was adopted in 2001, providing adequate time to examine its implementation. Second, the plan area includes some of the city's common baseline zoning requirements along with an overlay of different land use

² The VWSP plan is commonly referred to as "the SNAP" because of its subtitle as the Station Neighborhood Area Plan.

stipulations. Third, the built environment in the area exhibits considerable variety, ranging from single-family neighborhoods to high-density mixed-use corridors. Fourth, it is an area with modest, but not extreme, amounts of growth; at least 1,400 new housing units were constructed between 2000 and 2010 (Chatman et al., 2016; City of Los Angeles, 2015a).

Regulatory changes in the plan

The VWSP includes a mix of new, loosened, and tightened regulatory provisions. The plan eases density limits in some areas; reduces minimum parking requirements and imposes parking maximums on new construction; makes it easier to adapt existing buildings without providing additional parking; and incentivizes mixed-use buildings on commercial streets (City of Los Angeles, 2001). It also adds new development impact fees for parks, transitional height requirements, pedestrian thoroughway standards, and design guidelines (City of Los Angeles, 2001).

The VWSP regulates the floor area ratio (FAR) of commercial and mixed-use buildings and includes parking minimums and maximums for residential uses.³ The allowable FAR in the VWSP area ranges from 1.5 to 3.0, depending a parcel's location within one of the plan's five subareas. Though minimum parking requirements are ubiquitous in Los Angeles, parking maximums are almost non-existent. The requirements are tied to the number of habitable rooms in each residential unit. Additionally, developments within 1,500 feet of a Metro Rail Red Line station entrance are allowed to reduce required parking by 15% (City of Los Angeles, 2001).

³ Floor area ratio (FAR) is the ratio of building to site size. Buildings with only residential uses were not subject to FAR requirements.

Plan area trends

In the 1990s, the VWSP area experienced little new development and limited investment, lagging in “economic activity compared to adjacent downtown and Hollywood areas, and many of its early 20th-century buildings were in need of reinvestment” (Chatman et al., 2016, p. 55). Local planners, developers, and residents blamed this stasis on damage to the neighborhood from the 1992 Los Angeles civil unrest, recovery from the 1994 Northridge earthquake, and high neighborhood crime rates (Chatman et al., 2016).

After the plan’s adoption, which coincided with the 2000 opening of four new Red Line rail stations, there was modest housing growth coupled with population decline, due to demographic shifts and shrinking household sizes. These 2000-2010 trends were similar to those in the nearby Koreatown neighborhood, which was not subject to a new overlay plan (Chatman et al., 2016). Recent building permit and entitlement data suggest that development activity has increased, particularly for rental housing, following the Great Recession (City of Los Angeles, 2015a).

Data and methods

My approach to analyzing how developers respond to different land use regulations has two parts: (1) A building analysis of the Vermont/Western plan area and the Koreatown comparison area, and (2) interviews with local planners and developers.

Building analysis

I first create a dataset of new multifamily and mixed-use residential developments in the VWSP area. I identify the multifamily and mixed-use residential developments that had building

permits approved between early 2006 and late 2015 (City of Los Angeles, 2015a). I then used Google Street View to verify if the buildings were completed or under-construction by early 2017. Sixteen development projects met these criteria.

I then select a comparison area to supplement the VWSP analysis. I follow Chatman et al. (2016) and choose the Koreatown neighborhood as a comparison area. Koreatown is located south of the VWSP area and has three rail transit stations (Chatman et al., 2016). Koreatown's urban form and new development does differ somewhat from that of the Vermont/Western area. Koreatown is closer to downtown, with somewhat higher intensity land uses than the VWSP area. Koreatown has more new condominium and fewer affordable developments than the VWSP area. I identify 39 mixed-use and multifamily projects approved since 2006 that were under construction or completed by early 2017 in the Census tracts surrounding these rail stations. I randomly select 16 of these developments to compare with the VWSP developments.

For each residential development in VWSP and Koreatown, I review approval letters from the planning department and planning commission, environmental review documents, site plans, elevation plans, floor plans, parking plans, and landscape plans. I compare the actual characteristics of each development with baseline regulations of allowable and conditional uses, density, height, parking, and open space. For each characteristic, I calculate a percentage variable based on how each approved building corresponds with the baseline regulatory standards. For example, if the baseline zoning allows 100 units on a site, but 125 units are actually approved, the development has 125% of the site's baseline allowable density.

In the VWSP area, developments range from a two-story apartment building with seven housing units to a seven-story mixed-use residential building with 280 housing units. Of these developments, 7 are exclusively affordable housing, 2 are primarily market-rate housing with

some affordable units, and 7 are exclusively market-rate housing (Table 1). In the Koreatown sample, developments range from a five-story apartment building with 12 units to a 29-story mixed-use residential building with 464 units. The Koreatown sample 2 developments that are exclusively affordable housing, 3 market-rate developments with some affordable housing, and 11 market-rate developments.

Interviews

There were questions that I could not answer through the building analysis, so I talked with nine experts about zoning and development approvals in Vermont/Western and across Los Angeles. I interviewed three staff members from the city's planning department (including two planners with extensive experience with development approvals in the VWSP area), and four real estate developers or their planning consultants who have worked on development approvals in Vermont/Western and/or Koreatown. I also interviewed two other Los Angeles private-sector planners or housing advocates to better understand how the Vermont/Western and Koreatown areas fit into the broader citywide context. I synthesize the experts' perspectives in terms of (1) how zoning requirements shape residential development outcomes, (2) the development approval process, and (3) developers' strategies for deviating from the baseline zoning.

Vermont/Western building analysis results

I first summarize all multifamily developments in VWSP, and then I stratify my building sample into affordable and market-rate developments; apartments and condominiums; small and large developments; and mixed-use and residential-only projects (Table 1).

Table 1: Regulations and multifamily residential development characteristics in Vermont/Western (2006-2016)

	Number of projects	Units (mean)	% of max. FAR	Residential density (mean)	% of max. residential density	% of max. height	Parking ratio (mean)	% of min. parking	% of max. parking	% of min. open space
<i>All developments</i>	<i>16</i>	<i>51</i>	<i>103%</i>	<i>83</i>	<i>112%</i>	<i>84%</i>	<i>1.48</i>	<i>94%</i>	<i>74%</i>	<i>108%</i>
Affordable	7	63	101%	109	127%	87%	0.86	61%	49%	103%
Market-rate	7	12	N/A	54	90%	72%	1.98	120%	94%	115%
Mixed income	2	144	114%	91	138%	107%	1.88	117%	94%	101%
Apartment	13	59	103%	87	117%	84%	1.30	84%	68%	108%
Condo	3	13	N/A	63	94%	83%	2.25	136%	100%	107%
Small (<50 units)	11	19	99%	62	98%	80%	1.76	109%	87%	108%
Large (50+ units)	5	121	106%	129	144%	91%	0.86	59%	48%	108%
Mixed-use	5	116	103%	111	139%	103%	1.05	73%	62%	101%
Residential- only	11	21	N/A	70	100%	74%	1.67	103%	80%	111%

All multifamily developments

The average multifamily building exceeded many zoning code requirements, routinely through density bonus incentives. Developers most commonly exceeded density limits and minimum parking requirements. The average project was built at 103% of the allowable floor area, and 112% of the allowable residential density. The average development was built with 1.48 parking spaces per unit, representing 94% of the minimum parking required. Height limits and open space seemed to be lesser constraints, as the average development was built at 84% of the maximum allowable height and included about 8% more open space than required. There was considerable variation depending on the project characteristics, as described below.

Affordable, mixed-income, and market-rate developments

Affordable housing was more common in the Vermont/Western area than citywide. Of the 16 developments, 7 were exclusively affordable housing. Of these affordable housing developments, 6 were built using density bonus incentives. The affordable developments averaged slightly over the maximum baseline FAR, 127% of the maximum baseline residential density, and 61% of the minimum baseline required parking. Height and open space requirements were lesser constraints for these developments.

Two predominantly market-rate developments also qualified for density bonus incentives by including some affordable units. One was a 7-unit apartment building with 2 affordable units, and the other was a 280-unit mixed-use building with 23 affordable units. For these projects, developers used density bonus incentives to build 140% and 135% of the baseline allowable housing respectively. The developer of the larger project also used the density bonus to build an 86-foot building on a site with a 75-foot height limit. Both developers exercised the opportunity to build more densely, but decided to pass on other available incentives, including parking allowances.

Seven of the developments were market-rate, with no affordable units, and these tended to approach the baseline density requirements. The average for these buildings was 92% of the residential density limit and 116% of the minimum parking requirement. The average parking ratio was 1.9 spaces per unit. Additionally, these developers built about 16% more open space than was required.

Rental and condominium developments

During the study period, most of the new units in the area were rental apartments. This is consistent with neighborhood trends in which nearly 90% of the housing was renter-occupied,

and the strong rental housing market after the Great Recession (Chatman et al., 2016). Most of the rental developments were affordable and approved using density bonus incentives. The rental buildings, on average, exceeded baseline density limits and provided less parking than was required.

Three condominium buildings were constructed, and these projects were relatively small infill developments with between 11 and 17 housing units. Two of the three maximized the density allowed, suggesting density limits acted as a ceiling. The most notable and consistent result here is that all three condominium projects provided the maximum amount of parking allowed, in these cases about 2.25 spaces per housing unit. For these developers, the *minimum* parking requirements were not a constraint but rather the *maximum* ones were. In contrast, only one of the 13 apartment projects in the area reached the parking maximum, and this was a small infill project on a side street.

Small versus large developments

I segment projects by size for several reasons. First, Los Angeles applies additional approval requirements on projects of 50 units or more. Second, most of Los Angeles's new multifamily units are in larger projects. Third, the developers who build larger projects may have different professional characteristics than developers of smaller projects. Consistent with the city's approval requirements, I use 50 units as the break point between small and large developments. The average small project had 19 units and the average large project had 121 units. The five large projects included 75% of the new multifamily units in the VWSP area, and the 11 small projects included 25% of the new multifamily units.

There were differences between small and large projects. Small developments hugged the baseline limits, and only 3 of the 11 exercised the density bonus options. The average small project was built at 99% of the FAR limit, 98% of the residential density limit, and provided 9% more parking than required. Meanwhile, all five of the large developments received density bonuses and were approved at 106% of the base FAR, 144% of the baseline residential density, and with 59% of the minimum required parking.

Comparison with Koreatown development projects

I analyze a sample of development projects in nearby Koreatown (Table 2) to better understand how the VWSP results compare with those in a nearby transit-oriented area without a specific plan (Table 3).

Table 2: Regulations and multifamily residential development characteristics in Koreatown (2006-2016)

	Number of projects	Units (mean)	% of max. FAR	Residential density (mean)	% of max. residential density	Parking ratio (mean)	% of min. parking	% of min. open space
<i>All developments</i>	<i>16</i>	<i>126</i>	<i>70%</i>	<i>151</i>	<i>99%</i>	<i>1.51</i>	<i>88%</i>	<i>93%</i>
Affordable	2	58	74%	131	121%	0.73	64%	92%
Market-rate	11	150	73%	169	97%	1.56	91%	92%
Mixed income	3	81	60%	98	94%	1.83	95%	96%
Apartment	10	133	67%	162	101%	1.28	85%	96%
Condo	6	113	81%	133	97%	1.87	94%	81%
Small (<50 units)	5	26	54%	85	97%	1.78	88%	93%
Large (50+ units)	11	171	75%	181	101%	1.38	88%	93%
Mixed-use	5	242	80%	203	105%	1.17	85%	94%
Residential-only	11	73	64%	127	97%	1.66	89%	93%

Note: Height limits not included in table because only two projects were subject to these requirements. Additionally, there were no maximum parking requirements in Koreatown.

The biggest similarities in the VWSP and Koreatown results relate to parking and residential density. The average parking ratio in both areas was quite similar (1.51 spaces/unit in Koreatown vs. 1.48 in VWSP). The average building in Koreatown provided 88% of the minimum required parking, again suggesting that developers would prefer to build less parking than was required. The Koreatown results show that developers built fewer parking spaces per unit in apartments versus condos, large projects versus small ones, and market-rate versus affordable developments. Parking reductions were commonly achieved through the density bonus ordinance, variances, and the 2013 citywide bicycle parking ordinance, which allows developers to substitute bicycle parking for some required auto parking spaces (City of Los Angeles, 2013a).

Developers in Koreatown, like Vermont/Western, were constrained by residential density limits. The residential density limits in the areas were different; the maximum residential density for the projects in Koreatown was about twice that of that for projects in VWSP. In Koreatown, the average development was built to 99% of the allowable density, and seven of the developments exceed their maximum allowable density through density bonuses or variances.

The three main differences between VWSP and Koreatown relate to floor area ratio (FAR), open space, and height requirements. In the VWSP area, most multifamily buildings were not subject to FAR limits and the most permissive area of the VWSP had an FAR limit of 3.0. In Koreatown, the buildings were subject to FAR limits, and the limits were generally at 6.0 FAR. Floor area ratio was not an apparent constraint for most Koreatown developments; only one exceeded the baseline allowable FAR and most were considerably below the limit.

Second, regulatory relief for open space requirements was more common in Koreatown than in VWSP. There were four projects for which open space data were not available, but half

of the projects for which I have data provided less open space than required and the others hovered around the requirements. Open space may be harder to provide or configure on sites for higher density development.

Third, height limits were an important factor in VWSP – and particularly transitional height requirements – but in Koreatown most of the developments were not subject to any height limits. This is because they were in the city’s Height District 2, making development subject to FAR limits but no height restrictions.

Table 3: Comparison between VWSP projects and Koreatown sample

	VWSP	Koreatown
Number of projects	16	16
Units (mean)	51	126
% of max. FAR	103%*	70%
Residential density in du/acre (mean)	83	151
% of max. residential density (du/acre)	112%	99%
% of max. height	84%	N/A**
Off-street parking ratio (mean)	1.48	1.51
% of min. parking required	94%	88%
% of max. parking allowed	74%	N/A***
% of min. open space	108%	93%

* Five mixed-use developments in VWSP were subject to FAR limits.

** Height limits were only applicable to two developments in Koreatown.

*** Developments in Koreatown were not subject to any maximum parking requirements

Insights from expert interviews

Developers and planners walked me through sample development processes from project conception to lease-up. Developers and consultants explained that the baseline zoning is generally the starting point for exploring development options, and part of the initial feasibility analysis is assessing the viability of regulatory deviations. One consultant likened this to “peeling back the layers of an onion.” Developers lay groundwork before any official proposal is

submitted. A developer may pitch their initial proposal to the local city council member to identify red flags and build early political support. A developer may meet with city planning staff to vet the draft proposal. Developers also begin reaching out to neighbors and neighborhood groups. One interviewee described it as the “art” of setting up a project for successful approval.

Zoning may constrain multifamily development, but not always, according to the experts. Some smaller multifamily developments are proposed within the baseline zoning requirements and trigger no discretionary review by city officials. However, these projects allowed “by-right” are the exception in Los Angeles. The bulk of the city’s new multifamily units are in medium and large developments, and these commonly necessitate deviations from the baseline zoning requirements, and tend to be subject to more complicated approvals.

The interviewees did not exactly agree about which regulations were most constraining. One developer found the biggest constraints to be floor area ratio limits, residential density limits, minimum parking requirements, and sometimes setbacks. One planning consultant thought floor area caps are the biggest constraint, particularly in commercial zones in “Height District 1,” where parcels were downzoned to a floor area ratio of 1.5 in the 1986 voter-approved Proposition U.⁴ One consultant explained that there are commonly issues where commercial parcels abut single-family residential parcels. Another consultant explained that it is usually a combination of the regulations mentioned above.

There was variation in whether planners and developers viewed parking requirements as a barrier. This was mainly because the Vermont/Western standards are generally lower than the citywide average, and further reductions are possible for projects within 1,500 feet of a Metro

⁴ Allowable floor area ratios were halved by this ballot measure in Height District 1, which covered about 85% of the city’s commercially zoned areas in 1986 (Whittemore, 2012).

rail station and through density bonus incentives. In Koreatown, several developers provided bicycle parking in lieu of some required automobile parking. Overall, density, floor area ratios, and parking requirements were the most commonly mentioned constraints.

The interviewees described several regulatory issues unique to the VWSP specific plan provisions. Several interviewees found that the Vermont/Western plan made development more complicated than in other neighborhoods. These planners and developers mentioned that transitional height requirements can challenge a development depending on the site layout and neighboring properties. One consultant found that lot assembly – the joining of parcels to create a larger development site – is a problem if part of the site is in the most restrictive subarea of the VWSP, which discourages the practice. One interviewee thus described the plan as the strictest specific plan in the city, and another said the VWSP was “very very onerous.” One planner, however, thought it was more of a mixed situation, with most requirements in the VWSP comparable to zoning requirements elsewhere, some requirements less restrictive (e.g., parking), and some requirements more restrictive (e.g., transitional height and mixed-use incentives).

Several interviewees thought that a fundamental problem with land use regulation in Los Angeles is that little development can be approved “by-right.” The two main reasons are that the Los Angeles code requires a discretionary review (“site plan review”) for any development with at least 50 residential units, and it is challenging to build without any relief from the baseline zoning requirements. One consultant described the process through which the city grants relief from baseline zoning as illustrative of the “transactional” nature of zoning implementation in Los Angeles.

Three paths for deviating from the zoning include a project permit adjustment, project permit exception, and density bonus application. An adjustment can be approved by the city’s

planning director for smaller deviations. An exception must be approved by the Area Planning Commission, and is typically reserved for larger deviations. But, most commonly, developers used state-enabled density bonus incentives to deviate from baseline land use regulations.

Interviewees concurred that for developers seeking to stray from the baseline zoning, the density bonus was the most streamlined route. One private sector interviewee called the density bonus “the best incentive out there.” The density bonus can be used as a strategy for getting on-menu incentives (e.g., build taller, denser or with less parking), even if the developer does not end maximize the permitted density on a site. A developer may not maximize the full allowable density on a site, for example, if doing so would necessitate using steel construction instead of less expensive wood-frame construction. One developer who works citywide explained that they use the density bonus program on most projects, although they will not apply if they are able to make the project work without it. They aim to “fly under the radar” as much as possible. If they request density bonus incentives, they mostly use on-menu incentives, and off-menu incentives only if necessary.

Public and private sector interviewees generally agreed that development approvals, particularly for large or complicated projects, were political. This was an advantage for some; one interviewee explained that “most sophisticated developers know the game.” Another interviewee, who also used the game metaphor, added that the most successful developers have learned the game through experience. This interviewee emphasized that development approvals are often more “art than science.”

Part of the so-called game involves avoiding appeals and lawsuits, if possible. One interviewee characterized the main neighborhood council in which the VWSP falls as being particularly “active.” I interpreted this to mean that one or more local residents are likely to

challenge or appeal projects that they do not like.⁵ For density bonus applications, only the abutting property owners can appeal, while for other deviations, anyone in the city can appeal. The likelihood of an appeal depends on the proposed project and its location. Several interviewees mentioned that appeals were more likely in Hollywood and west Los Angeles than downtown Los Angeles, for example. While the threat of appeals looms over planners and developers, according to the interviewees, actual appeals are less common.

Assessing written regulations and their implementation

The Vermont/Western and Koreatown results suggest two main findings: (1) developers are sensitive to density limits and parking requirements, and (2) the implementation of regulations can be as important as the written regulations themselves.

Density limits commonly constrain development

First, density caps are a common constraint for developers, particularly of affordable housing and large developments. The results support the hypothesis that many developers would build more densely if zoning allowed it. Many developers' close conformance to the zoning limits – and common requests to deviate from the baseline zoning using density bonus incentives – provides evidence that developers would build more housing (and less parking) given the opportunity. A citywide increase in density bonus uptake suggests that this is not isolated to the Vermont/Western and Koreatown areas (Los Angeles Department of City Planning, 2015). It

⁵ Neighborhood councils cannot appeal proposed projects, but individuals can.

seems reasonable to expect that if baseline density restrictions were loosened, developers would build more housing in many Los Angeles neighborhoods.

The amount of new housing built would depend on the local context, and how density limits are designed. The two types of direct density caps that I studied were residential density (dwelling units per acre) and floor area ratio (FAR). In VWSP and Koreatown, residential developments were commonly constrained by residential density limits, while less so by FAR requirements. This was because only mixed-use developments in VWSP were subject to FAR limits, and most of the developments in Koreatown were subject to a 6.0 FAR, which is difficult to achieve given residential density limits.

Parking requirements matter

Parking requirements matter for transit-oriented development in several ways. Parking requirements may make new housing development less feasible by increasing development costs and indirectly restricting densities (Deakin, 1989; Landis, Hood, Li, Rogers, & Warren, 2006; Manville, 2013). Parking requirements may also counteract transit ridership goals by inducing auto ownership and enabling more driving (Chatman, 2013; Manville, 2017; Manville, Beata, & Shoup, 2013; Shoup, 2005).

Beyond regulations, the amount of parking built is also a function of market and political factors. Some developers – including developers in transit areas – may build more parking than required because they act conservatively, erring on the side of too much parking rather than too little; perceive there to be market demand for more parking; and/or comply with stringent lending requirements (Cervero, 2004).

The requirements were somewhat different in VWSP and Koreatown, but minimum parking requirements were constraints to developers of affordable and lower-end market-rate housing in both areas. The affordable housing developments were all approved at or below the minimum parking required. There was more variation for market rate developments. The predominantly or exclusively market rate developments in VWSP all met or exceeded the minimum requirements, while those in Koreatown tended to include less than the minimum required. In Koreatown, of the 14 market-rate and mostly market-rate developments, eight provided below the minimum, four provided the exact minimum, and two provided between 1% and 4% more parking than required. Overall, it seems reasonable to expect developers to be most affected by minimum parking requirements in denser, centrally-located neighborhoods with frequent transit service.

Parking maximums were a constraint for some apartment and condominium developers in Vermont/Western. The average condominium building in VWSP area had 2.25 spaces per unit. Two apartment developers in VWSP hit the parking maximum, though that is because the parking minimums and maximums for studios and one-bedroom apartments are the same. Eliminating minimum parking requirements and imposing parking maximums would essentially affect two different constituencies. Easing or eliminating minimum parking requirements would most help affordable developers and those who build less expensive market-rate housing. Adding maximum parking requirements, depending on the level at which they are set, would most likely affect condominiums and upscale apartments. We should engage in future research to understand how different types of developers – large and small, professional and amateur, apartment and condo, mixed-use and residential-only, self-financed and institutionally-financed – in different types of neighborhoods respond to parking minimums and maximums.

Importance of understanding implementation processes

The implementation of regulations can matter as much as, or more than, the written regulations themselves. We cannot understand the full puzzle of land use regulations without studying both the written and implementation components. One interviewee expressed appreciation that I was quantifying zoning and development outcomes, but emphasized the importance of understanding the intangible details of the approval process occurring behind the scenes.

Planners and elected officials exercise discretion as they implement land use regulations. The interviewees emphasized that while decision makers employ discretion at different points in the process, developers highly value proven pathways to approval. Developers are often willing to provide public benefits in exchange for allowances and/or increased certainty with development approvals. Developers today are commonly using density bonus incentives to build more housing in the surest way possible. Los Angeles grants deviations and a clearer approval path in exchange for income-restricted affordable housing provided by developers. For an increasing share of developers in the Vermont/Western area, and seemingly elsewhere in the city, this is a worthwhile trade. Los Angeles is expanding this approach with its new transit-oriented affordable housing incentives, which provide more generous allowances and lower affordable housing requirements near rail stations and other major transit stops (City of Los Angeles, 2017).

Opportunities to better understand written regulations and their implementation

The case study approach allowed me to examine project details in depth and interview local experts. There were some common themes in the Vermont/Western and Koreatown areas, but I am cautious about generalizing these results to other neighborhoods and cities. Future research should expand this mixed-methods approach to a larger sample of projects across a metropolitan area. For instance, we should compare TOD and non-TOD development, multifamily and mixed-use development, and urban infill and greenfield development. It will also be important to engage in qualitative research on the implementation of regulations in these contexts – including how discretion is applied – since many of the important details are not contained in administrative data.

Despite a myriad of planning and zoning requirements, cities do not tend to collect comprehensive data on the characteristics of approved projects. This means that ascertaining many basic project details requires muddling through approval letters, site plans, and apartment and condominium marketing materials. The most glaring example of this from my research in Los Angeles is the city's byzantine parking regulations coupled with little tracking of how many parking spaces are actually built. I call on municipalities to organize and compile data about the characteristics of new developments. Cities should track these data and make them available to the public.

Further research should also examine how and if these new developments support the transit-oriented development goals of reducing driving, increasing transit ridership, and providing housing options for households with low- and moderate-incomes. This vein of research would allow us to connect regulations, building characteristics, and equity and environmental outcomes.

Conclusions and policy implications

There are debates across the United States about the best regulatory strategies for encouraging infill development and implementing transit-oriented development. One side argues that cities should ease density requirements and “get out of the way” of development near transit. The other argues that cities should establish baseline regulatory floors and ceilings, and then require developers to provide public benefits in order to exceed these limits. The efficacy of either approach depends on an understanding of how developers actually respond to regulations in different contexts. The results from Los Angeles are most applicable to growing cities in strong housing markets.

The fundamental question is what kinds of written regulations and implementation approach will get a city closest to its equity, environmental, and economic goals. Los Angeles, like many American cities, wants to grow around transit to reduce driving and auto congestion, increase transit ridership, and add affordable housing. The first step in linking planning and regulation with societal outcomes is to understand how regulations actually shape the built environment.

I conclude that land use regulations matter for urban development, and density and parking regulations particularly so. Cities and state governments should closely scrutinize these regulatory provisions. Although land use regulations are primarily locally controlled, state governments can play an important role too. For example, the state-mandated density bonus incentives demonstrate how state law can influence local development characteristics. But, changes to regulations can also occur through local political processes, including voter initiatives. For example, in 2016 Los Angeles voters approved Measure JJJ, which has led to new incentives for denser affordable housing near transit (City of Los Angeles, 2016, 2017). It will

remain to be seen how and if these expanded incentives shape new development in areas like Vermont/Western and Koreatown.

Again, written regulations are only part of the puzzle. The rest of the puzzle is figuring out how regulations are implemented. Cities should design planning and zoning systems that are fair and predictable for both existing residents and developers. Land use regulations must follow planning, and the goal should be to marry proactive planning with supportive zoning requirements and straightforward approval processes.

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