

McKinsey&Company

MCKINSEY GLOBAL INSTITUTE

A TOOL KIT TO CLOSE CALIFORNIA'S HOUSING GAP: 3.5 MILLION HOMES BY 2025

OCTOBER 2016

MCKINSEY
GLOBAL
INSTITUTE

CELEBRATING
25 YEARS OF
INSIGHT

25

MCKINSEY GLOBAL INSTITUTE

In the 25 years since its founding, the McKinsey Global Institute (MGI) has sought to develop a deeper understanding of the evolving global economy. As the business and economics research arm of McKinsey & Company, MGI aims to provide leaders in the commercial, public, and social sectors with the facts and insights on which to base management and policy decisions. The Lauder Institute at the University of Pennsylvania ranked MGI the world's number-one private-sector think tank in its 2015 Global Think Tank Index.

MGI research combines the disciplines of economics and management, employing the analytical tools of economics with the insights of business leaders. Our "micro-to-macro" methodology examines microeconomic industry trends to better understand the broad macroeconomic forces affecting business strategy and public policy. MGI's in-depth reports have covered more than 20 countries and 30 industries. Current research focuses on six themes: productivity and growth, natural resources, labor markets, the evolution of global financial markets, the economic impact of technology and innovation, and urbanization.

Recent reports have assessed prospects for the Chinese economy, income inequality in advanced economies, the outlook for Africa, and the potential of digital finance in emerging economies. MGI is led by four McKinsey & Company senior partners: Jacques Bughin, James Manyika, Jonathan Woetzel, and Eric Labaye, MGI's chairman. Michael Chui, Susan Lund, Anu Madgavkar, and Jaana Remes serve as MGI partners. Project teams are led by the MGI partners and a group of senior fellows, and include consultants from McKinsey offices around the world.

These teams draw on McKinsey's global network of partners and industry and management experts. Input is provided by the MGI Council, which co-leads projects and provides guidance; members are Andres Cadena, Richard Dobbs, Katy George, Rajat Gupta, Eric Hazan, Acha Leke, Scott Nyquist, Gary Pinkus, Shirish Sankhe, Oliver Tonby, and Eckart Windhagen. In addition, leading economists, including Nobel laureates, act as research advisers.

The partners of McKinsey fund MGI's research; it is not commissioned by any business, government, or other institution. For further information about MGI and to download reports, please visit www.mckinsey.com/mgi.

A TOOL KIT TO CLOSE CALIFORNIA'S HOUSING GAP: 3.5 MILLION HOMES BY 2025

OCTOBER 2016



Jonathan Woetzel | Los Angeles

Jan Mischke | Zurich

Shannon Peloquin | San Francisco

Daniel Weisfield | San Francisco

PREFACE

Access to decent, affordable housing is so fundamental to the health and well-being of people and the smooth functioning of economies that it is embedded in the United Nations Universal Declaration of Human Rights. Yet in developing and advanced economies alike, cities struggle with the dual challenges of housing their poorest citizens and providing housing at a reasonable cost for middle-income households. In October 2014, the McKinsey Global Institute published a major global report on this issue, *A blueprint for addressing the global affordable housing challenge*. In this new paper, we look specifically at the US state of California and offer a tool kit for fixing a chronic housing shortage.

This research was led by Jonathan Woetzel, an MGI senior partner based in Los Angeles; Jan Mischke, an MGI senior fellow based in Zurich; and Shannon Peloquin, an associate partner based in San Francisco. Daniel Weisfield, a consultant in the San Francisco office, led the project team, which comprised Vasudha Gupta, Julia Ng, and Byron Ruby. Ira Peppercorn, a senior adviser to McKinsey, contributed key insights, and Clara Chung, Menghan Li, Ben Silverstein, and Tejaswi Tharakabhusanam of McKinsey's Geospatial Analytics team provided invaluable analysis on land use and availability.

Many experts gave us their time and indispensable insights. We would like to acknowledge the board and staff of California Forward, particularly James Mayer, Lenny Mendonca, Susan Lovenburg, Fred Silva, and Justin Ewers. Special thanks also go to Carol Browner of Albright Stonebridge Group; Ben Metcalf, Lisa Bates, Melinda Coy, Megan Kirkeby, and Paul McDougall of the California Department of Housing and Community Development; Ray Pearl and Marina Wiant of the California Housing Consortium; Peter Calthorpe of Calthorpe Associates; Cathy Creswell of Creswell Consulting; Peggy Crane, Cathy Gallagher, and Lynn Reaser of the Fermanian Business and Economic Institute at Point Loma Nazarene University; Jennifer LeSar of LeSar Development Consultants; Debbie Ruane of the San Diego Housing Commission; Paul Nieto of Signature Development Group; Carol Galante of the UC Berkeley Turner Center for Housing Innovation; and Michelle Malanca Frey of the Urban Land Institute.

We would like to thank the many experts on the topic of affordable housing who shared their perspectives with us: Blair Allison (Cahill Contractors), Duane Bay (Association of Bay Area Governments), Holly Benson (Abode Communities), Mara Blitzer (San Francisco Mayor's Office of Housing and Community Development), George Bridges (San Francisco Office of Community Investment and Infrastructure), Lisa Brinton (City of Salinas), Paul Campos (Bay Area Building Industry Association), Nate Carlson (The Wolff Company), Donna Carpenter (Kern County Home Builders Association), Erin Carson (San Francisco Mayor's Office of Housing and Community Development), Gabriella Chiarenza (Federal Reserve Bank of San Francisco), Dave Cogdill (California Building Industry Association), Michael Coleman (California City Finance), Tim Colen (San Francisco Housing Action Coalition), Naomi Cytron (Federal Reserve Bank of San Francisco), Wendy DeWitt (San Diego Housing Commission), Bryan Dove (Mutual Housing), Bill Falik (UC Berkeley Haas School of Business, Berkeley Law School, and Westpark Community Builders), Jonathan Fishpaw (Republic Urban Partners), Megan Folland (Abode Communities), Pedro Galvao (Non-Profit Housing Association of Northern California), Richard Gentry (San Diego Housing Commission), Matthew Glesne (Los Angeles Department of City Planning), Brian Hanlon (SF Bay Area Renters' Federation), Tom Hardiman (Modular Building Institute), Jennifer Hernandez (Holland & Knight), Ed Holder (Mercy Housing), Robin Hughes (Abode Communities), Paolo Ikezoe (San Francisco Planning Department), Suzanne Ise (City of Sunnyvale), Rachel Iskow (Mutual Housing), Peggy Jen (Local Initiatives Support Corporation), Ma'Ayn Johnson (Southern California Association of Governments), Gus Joslin (San Bernardino County Housing Authority), Kevin Keller (Los Angeles Department of City Planning), Walter Kieser (Economic and Planning Systems), J. Michael Lane (Building Industry Association of Tulare and Kings Counties), Huasha Liu (Southern California Association of Governments), Linda Mandolini (Eden Housing), Paul Marra (Keyser Marston Associates), Mary Murphy (Gibson, Dunn & Crutcher), Chris Norem (North State Building Industry Association), H. Pike Oliver (URBANEXUS), Greg Pasquali (Carmel Partners), Diana Perkins (City of Sunnyvale), Jan Peters (Eden Housing), Denise Pinkston (TMG Partners), Michael Prandini (Building Industry Association of Fresno and Madera Counties), Jennifer Reed (Eden

Housing), Matt Regan (Bay Area Council), Shamus Roller (Housing California), Keith Rosenthal (Phoenix Realty Group), Patrick Sabelhaus (Law Offices of Patrick Sabelhaus), Alex Saunders (Phoenix Realty Group), Neil Saxby (Eden Housing), James Schmid (Chelsea Investment Corporation), Neil Sekhri (Gibson, Dunn & Crutcher), James Silverwood (Affirmed Housing), Janet Smith-Heimer (BAE Urban Economics), Peter Solar (Alliance Residential), Al Solis (Sol Development and Associates), Jay Standish (Open Door), Michael Stretch (North State Building Industry Association), Sarah Jo Szambelan (SPUR), Egon Terplan (SPUR), Sonja Trauss (SF Bay Area Renters' Federation), Rachele Trigueros (Bay Area Council), Maria Velasquez (San Diego Housing Commission), Greg Vilkin (Related California), Larry Westerlund (City of Fresno), Jeffrey White (San Francisco Mayor's Office of Housing and Community Development), Borre Winckel (San Diego Building Industry Association), Ben Winter (Los Angeles Mayor's Office), Anastacia Wyatt (City of Salinas), Dan Zack (City of Fresno), and Kevin Zwick (Housing Trust Silicon Valley).

Many McKinsey colleagues lent us their expertise, including Albert Brothers, Stephanie Brown, Roberto Charron, Garo Hovnanian, Annie Koo, Pat Madden, John Means, Aditi Ramdorai, John Reichl, and Jaana Remes.

Thanks go to MGI senior editors Janet Bush and Lisa Renaud; senior MGI graphic designer Marisa Carder and designer Margo Shimasaki; Jackie Charonis, Rebeca Robboy, and Holly Skillin for their help on external communications; Julie Philpot, MGI's editorial production manager; Chelsea Grewe and Deadra Henderson in MGI practice management; Eric Wellington, client service risk specialist; and digital specialist Magdalena Jusko.

This report contributes to MGI's mission to help business and policy leaders understand the forces transforming the global economy, identify strategic locations, and prepare for the next wave of growth. As with all MGI research, this work is independent and has not been commissioned or sponsored in any way by any business, government, or other institution. We welcome your comments on the research at MGI@mckinsey.com.

Jacques Bughin

Senior partner, McKinsey Global Institute
Brussels

James Manyika

Senior partner, McKinsey Global Institute
San Francisco

Jonathan Woetzel

Senior partner, McKinsey Global Institute
Los Angeles

October 2016

INSIDE

1. A market with growing demand but faltering supply

Page 1

2. Fifteen tools for closing the gap

Page 8

3. How to close the gap: A community-based approach for action

Page 40

Appendix

Page 45

Bibliography

Page 54

IN BRIEF

A TOOL KIT TO CLOSE CALIFORNIA'S HOUSING GAP

As California real estate prices rise three times faster than household incomes, more than 50% of the state's households cannot afford the cost of housing. There are many ways to tackle this crisis. Our findings include:

- From 2009 to 2014, California added 544,000 households but only 467,000 net housing units. States such as New York have added nearly 80 percent more housing units than California relative to population growth. As a result, California's real estate prices have increased by more than 15 percent since 2009, but median income by only 5 percent.
- The state now has a \$50 billion to \$60 billion annual housing affordability gap. Virtually none of California's low-income and very-low-income households can afford the local cost of housing. Nearly 70 percent of these households would have to spend more than half of their income to afford the local cost of housing.
- California ranks 49th among the 50 US states for housing units per capita. Benchmarked against other states on a housing units per capita basis, California is short about two million units. To satisfy pent-up demand and meet the needs of a growing population, California needs to build 3.5 million homes by 2025.
- In dollar terms, California loses \$140 billion per year in output or 6 percent of state GDP due to the housing shortage: more than \$90 billion in missing construction investment and more than \$50 billion per year in missing consumption that is crowded out by housing costs.
- California's communities need to identify "housing hot spots" where large numbers of housing units could be built with attractive returns, change the rules of the game to enable housing development on this high-potential land, cut the cost and risk of producing housing, and ensure that low-income and vulnerable individuals who are priced out of the market have access to housing. MGI has identified 15 tools to achieve this (see infographic).
- California could add more than five million new housing units in "housing hot spots"—which is more than enough to close the state's housing gap. In aggregate, there is capacity to build as many as 225,000 housing units on vacant urban land that is already zoned for multifamily housing; 1.2 million to three million housing units within a half mile of major transit hubs; nearly 800,000 units by allowing homeowners to add units to their homes; nearly one million units on land zoned for multifamily development but underutilized; and more than 600,000 affordable single-family units on "adjacent" land currently dedicated to non-residential uses.
- To unlock these units, California needs both public and private sector innovations. Shortening the land-use approval process in California could reduce the cost of housing by more than \$12 billion through 2025 and accelerate project approval times by four months on average. Reducing construction permitting times could cut another \$1.6 billion, and raising construction productivity and deploying modular construction techniques up to another \$100 billion. Governments could reallocate \$10 billion a year in developer impact fees to other forms of revenue generation in order to lower housing costs. California could also incentivize local governments to approve already-planned-for housing to achieve 40,000 more units annually.
- Attracting new sources of capital to affordable housing—such as employers, social impact investors, and financial investors seeking low-risk real assets in one of the world's most dynamic economies—could finance more than 30,000 affordable units a year. Policy tools such as inclusionary zoning, linkage fees, and tax increment financing can capture some of the value created through market-driven real estate development and channel it into subsidized affordable housing. Regulation needs to take account of developers' risks and returns to ensure that affordable housing policies do not stifle new market-driven supply.
- California's housing gap can only be solved at the local level, and communities can follow a five-step process to close the local housing gap: create a housing delivery unit; define the local problem; identify local solutions and map "housing hot spots;" align stakeholders behind a local strategy; and execute the strategy and measure performance.

A TOOL KIT TO CLOSE CALIFORNIA'S HOUSING GAP:

3.5 MILLION HOMES BY 2025

THE SITUATION TODAY



HALF THE STATE'S HOUSEHOLDS ARE UNABLE TO AFFORD THE COST OF HOUSING IN THEIR LOCAL MARKET



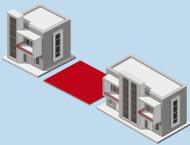
\$50 billion
ANNUAL HOUSING AFFORDABILITY GAP

\$140 billion
LOST ECONOMIC OUTPUT PER YEAR

TOOLS TO CLOSE THE GAP



IDENTIFY "HOUSING HOT SPOTS"



Build on vacant urban land already zoned for multifamily development



Intensify housing around transit hubs



Add units to existing single-family homes



Add units to underutilized urban land zoned for multifamily development



Develop affordable and adjacent single-family housing



REMOVE BARRIERS TO HOUSING DEVELOPMENT



Incentivize local governments to approve already planned-for housing



Accelerate land-use approvals



ENSURE HOUSING ACCESS



Prioritize state and local funding for affordable housing



Attract new investors in affordable housing



Design regulations to boost affordable housing while maintaining investment attractiveness



UNLOCK SUPPLY BY CUTTING THE COST AND RISK OF PRODUCING HOUSING



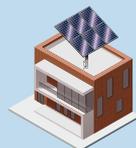
Raise construction productivity



Deploy modular construction



Accelerate construction permitting



Reduce housing operating costs



Align development impact fees with housing objectives



A TOOL KIT TO CLOSE CALIFORNIA'S HOUSING GAP: 3.5 MILLION HOMES BY 2025

1. A MARKET WITH GROWING DEMAND BUT FALTERING SUPPLY

CALIFORNIA'S RECENT ECONOMIC AND POPULATION GROWTH HAS STRENGTHENED DEMAND FOR HOUSING

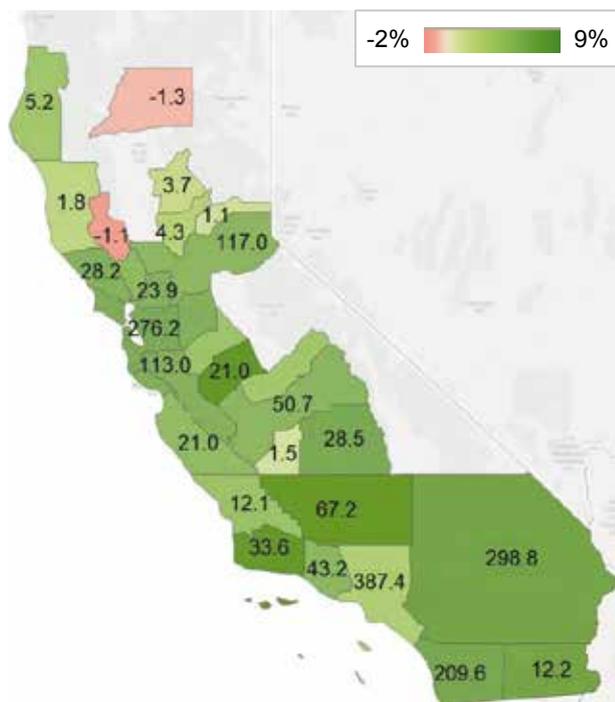
California's economy has experienced robust growth over the past five years, with GDP expanding by roughly 2.5 percent a year. Were California a country, it would be the sixth-largest economy in the world.¹ The health of the state's economy has contributed to healthy population growth. Between 2009 and 2014, California added more than half a million households and 1.8 million people (Exhibit 1). Incomes have been rising. Annual median income in the state increased by 5 percent from \$59,000 in 2009 to \$62,000 in 2014.

Exhibit 1

California's population and incomes are rising, creating more demand for housing

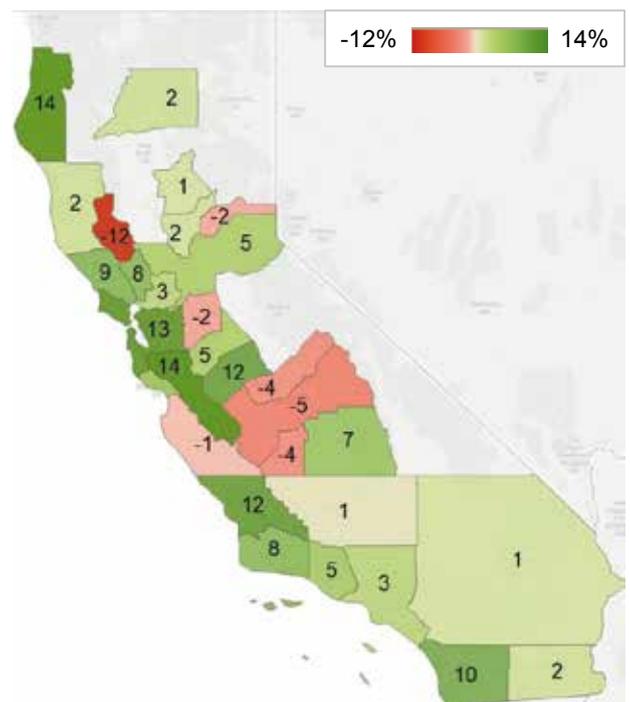
Net change in population, 2009–14

Thousand people



Change in household area median income, 2009–14

%



NOTE: Shaded regions represent 98% of state population; unshaded regions represent 2% of state population and lacked sufficient data.

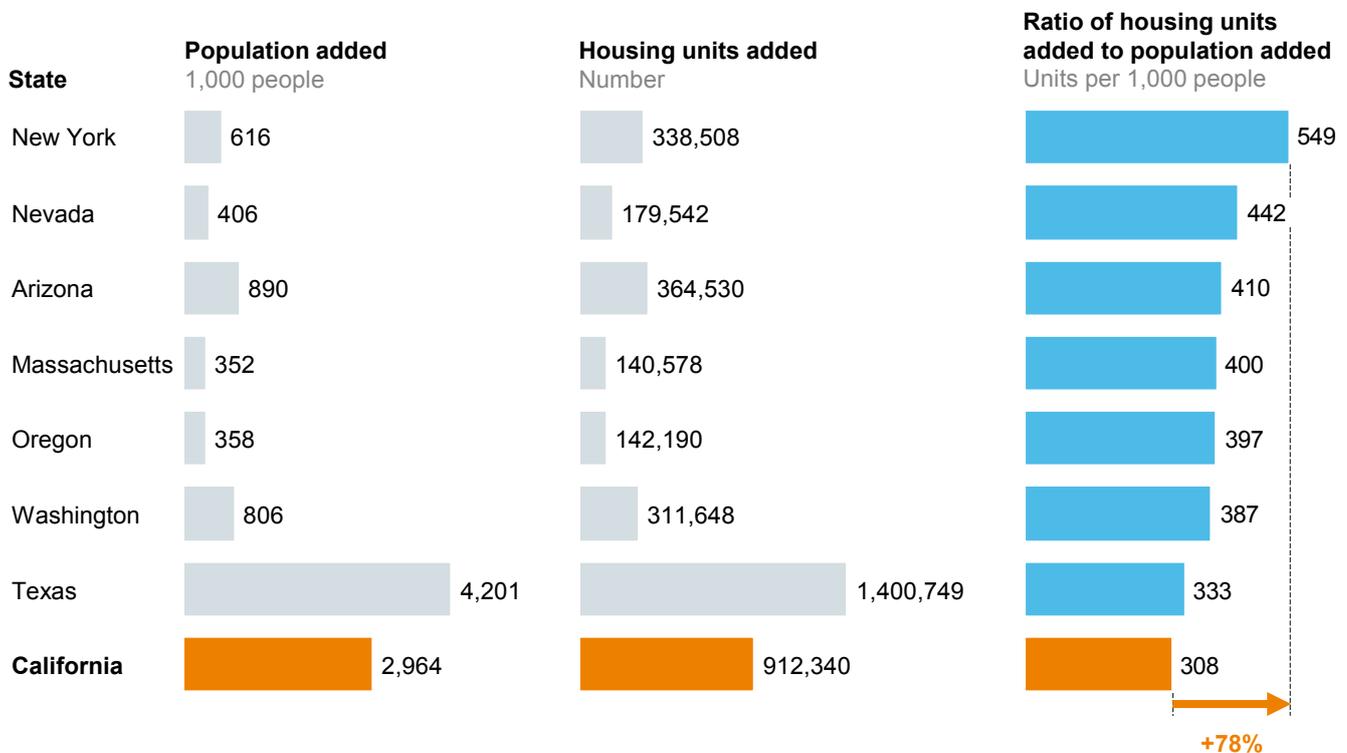
SOURCE: US Census Bureau; McKinsey Global Institute analysis

¹ International Monetary Fund; US Bureau of Economic Analysis.

However, the supply of homes has not kept pace with demand. Since 2005, California has added 308 units for every 1,000 new inhabitants. To put that into context, New York added nearly double that at 549 units per 1,000 new inhabitants (Exhibit 2). Between 2009 and 2014, California gained 544,000 households, but added only 467,000 net housing units.

Exhibit 2

California has produced less housing per capita than other US states—80 percent less than New York in 2005–14



SOURCE: US Census Bureau; McKinsey Global Institute analysis

Comparing housing units per capita in different US states, we find that California today has a shortage of some two million units. This is a conservative estimate, derived by comparing California’s housing units per capita to states such as New York and New Jersey, which are ranked 41st and 46th in the country, respectively, for housing supply. New York and New Jersey serve as a useful peer set for California, given the states’ demographic profiles, economic output per capita, and land economics. We therefore take the two million home gap as our base case.² If California were to exceed New York and New Jersey’s benchmark

² California’s underproduction of housing is not a new phenomenon. Since the 1970s, the state has added 6.7 million households and 19 million people, but only 6.2 million homes. This means that over a 40-year period, the state added only 325 homes for every 1,000 additional people. During the same period, New York and New Jersey added 1,007 and 681 homes, respectively, for every 1,000 additional people. It is therefore no surprise that California faces a statewide shortage. Today, it has 14 million homes for 39 million people. Again, to put this into context, if California had the same houses-to-people ratio as Texas, it would have 15.1 million homes. If it were to match New York or New Jersey, California would have 16 million homes. Achieving the US average would require 16.5 million homes. So, the state has a shortfall of between one million and 2.5 million homes. In this report, we use the midpoint of that range. Our methodology of benchmarking housing units against the population of different US states yields an intuitive, high-level estimate of housing availability in California vs. those other states. We took our estimates of population growth from Moody’s Analytics. By focusing on units per person instead of units per household, we control for variations in household size that may be caused by differences in housing prices. A limitation of this methodology is that it does not control for the various demographic factors that contribute to rates of household formation including age, income, and ethnicity, which vary at the local level and across states. Other analysts who have estimated California’s housing gap using different methodologies have also found a very sizable housing shortage. California’s Legislative Analyst’s Office estimated a shortage of 120,000 to 230,000 units per year. See Mac Taylor, *California’s high housing costs: Causes and consequences*, Legislative Analyst’s Office, March 2015. The Center for Continuing Study of the California Economy estimates a cumulative backlog of 700,000 units.

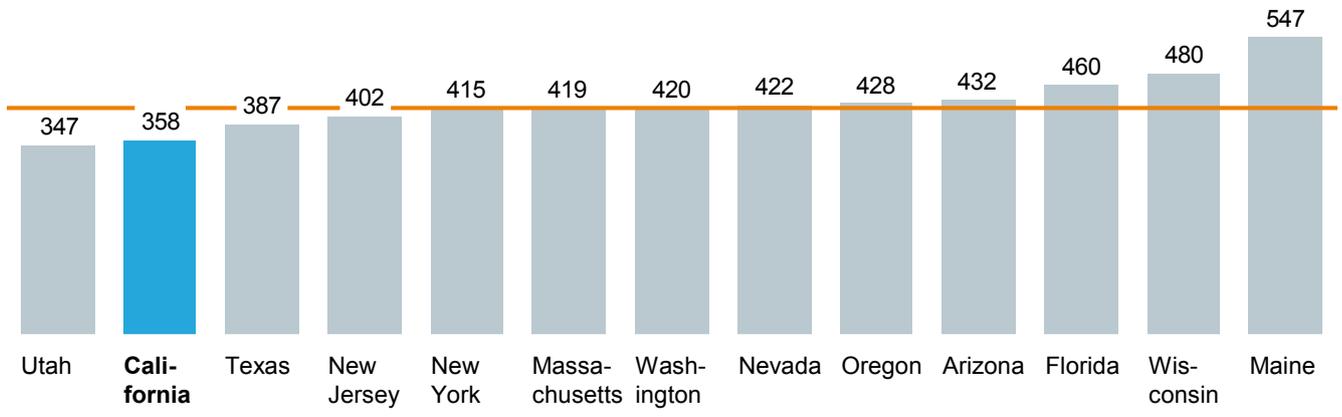
and meet the US average for housing units per capita, California would need to build significantly more than two million units today (Exhibit 3).

Exhibit 3

California would need to build 3.5 million housing units by 2025 to close its housing gap

Housing units per capita, 2014
Units per 1,000 people

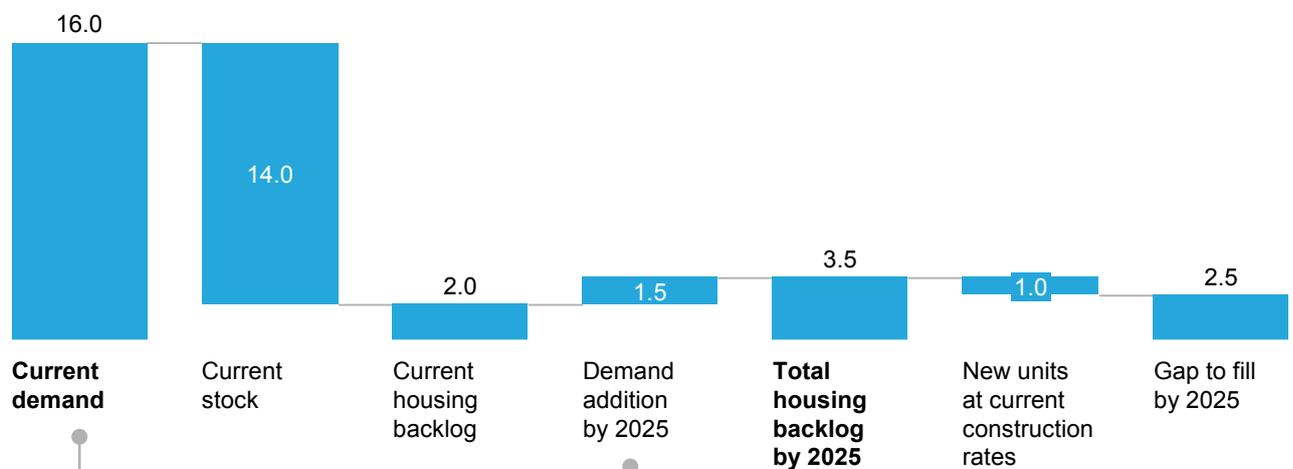
— US average = 419



State ranking

50 49 47 43 41 37 36 35 33 30 8 7 1

California's housing supply gap
Million housing units



Number of housing units needed in California to supply market at the same per capita rate as New York or New Jersey (i.e., 406 units per thousand people—still significantly less than US average)

Additional units needed to supply California's population growth through 2025 (at same per capita rate as New York or New Jersey)

SOURCE: US Census Bureau; Moody's Analytics; McKinsey Global Institute analysis

If this shortage is not addressed, it will intensify. At current construction rates, California will build an additional one million homes by 2025, but the population is expected to increase by 3.6 million people during this period, largely reflecting current residents having children—creating additional demand for housing.³ If California waits until 2025 to act, we estimate that the backlog will grow to 2.5 million units even after taking account of the additional one million new homes expected on the current trajectory.

CALIFORNIA FACES AN ANNUAL HOUSING AFFORDABILITY GAP OF BETWEEN \$50 BILLION AND \$60 BILLION; NEARLY HALF OF HOUSEHOLDS CANNOT AFFORD HOUSING

The combination of higher demand for housing and insufficient supply has inevitably pushed up California's real estate prices. In Merced, for instance, housing prices have risen four times as fast as income. In high-income areas such as Silicon Valley and San Francisco, prices have climbed at double the rate of income. That means that housing is becoming less affordable. Given that nearly half of California's households cannot afford the cost of housing in their local market, it is not an understatement to say that the state is facing an affordability crisis (see Box 1, "Definitions," and the appendix).⁴ In every metropolitan statistical area (MSA), at least 30 percent of households cannot afford the cost of housing; in some MSAs, nearly 60 percent are in this position (Exhibit 4).

The challenge affects both urban and rural California. Of the 5.9 million households unable to afford the cost of housing, approximately 3.7 million, or 62 percent, live in the inner San Francisco Bay Area and Los Angeles-Long Beach-Anaheim. However, 57 percent of households in the rural MSA of Santa Cruz-Watsonville are unable to afford the cost of housing. In Salinas and Clearlake, which are also rural, the share is 50 percent.

In high-cost areas, even households earning above the area median income cannot afford the cost of housing. For instance, in Los Angeles-Long Beach-Anaheim, households earning up to 115 percent of area median income, or \$69,800 per year, are squeezed. In Santa Cruz-Watsonville, the figure is 119 percent of area median income, or \$79,600, and in San Francisco-Oakland-Hayward, it is 106 percent, or \$84,700 per year. Within the city

³ Recent history indicates that the primary driver of California's population growth is a high birthrate. Between 2010 and 2015, the state's population increased by 1.9 million, the bulk of which—1.3 million—is a result of growing families. On a net basis, international migration contributed around 800,000 new residents, and domestic migration resulted in a loss of 200,000 residents who moved to other US states.

⁴ Our affordability calculations use 30 percent of household income as a household's "housing allowance." A household that cannot afford the cost of housing in the local market is a household that would have to spend more than 30 percent of its income to rent or purchase a local housing unit. For additional detail on methodology, see the appendix.

Box 1. Definitions

Housing affordability threshold: 30 percent of pretax household income, as defined by the US Department of Housing and Urban Development.

Standard housing unit: To control for variation in unit size, we assumed that every household requires 970 square feet (90 square meters) of floor space. This is a benchmark that McKinsey has used across the United States, based on the size of housing units in New York City's Mitchell-Lama housing program.

MSA: Metropolitan statistical area, as defined by the US Census Bureau. California has 34 MSAs, which serve as statistical subregions within the state. MSAs include, for example, San Francisco-Oakland-Hayward in Northern California, Los Angeles-Long Beach-Anaheim in Southern California, and Visalia-Porterville in the Central Valley.

AMI: Area median income per household per year, as reported in the 2014 US Census (the most recent year for which data are available).

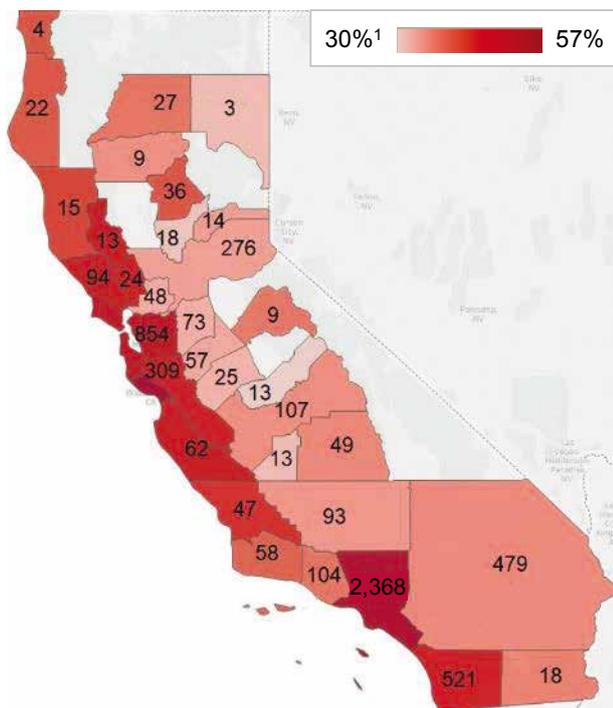
of San Francisco, a household earning \$140,000 per year, or 179 percent of area median income, cannot afford the cost of housing.

In dollar terms, the housing affordability gap for California’s households is between \$50 billion and \$60 billion per year (see the appendix for details about our methodology for estimating this gap).⁵ This is equivalent to 2 percent of state GDP. In dollar terms, two-thirds of California’s affordability gap is concentrated in two housing markets: \$23.7 billion in Los Angeles-Long Beach-Anaheim and \$10.4 billion in San Francisco-Oakland-Hayward.

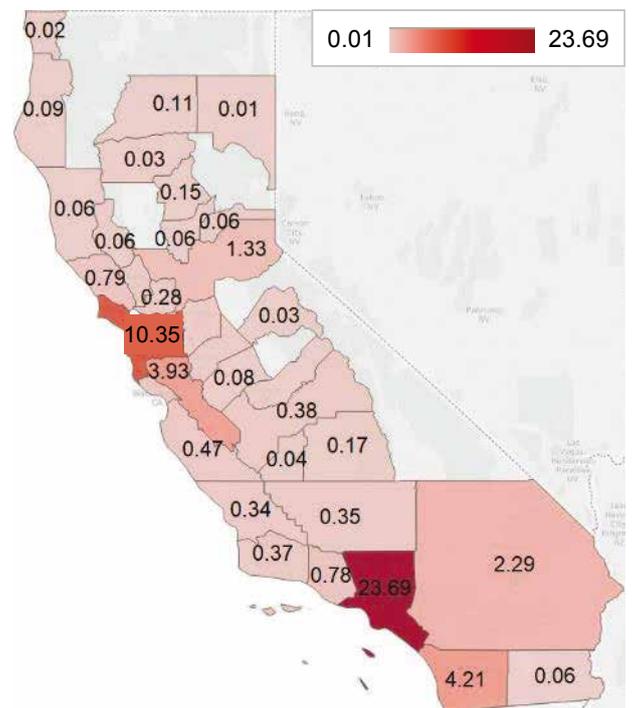
Exhibit 4

At least 30 percent of people in every metropolitan statistical area (MSA) cannot afford local rents; that share is 60 percent in some areas

Households in MSA unable to afford rent
Thousand



Distribution of affordability gap
\$ billion per year



1 Number of households in MSA unable to afford the local cost of rent, as a share of the total number of households in MSA.
NOTE: Shaded regions represent 98% of state population; unshaded regions represent 2% of state population and lacked sufficient data for analysis.

SOURCE: US Census Bureau; Zillow; McKinsey Global Institute analysis

California’s poorest households are affected the most

California’s poorest households are affected the most by rising housing costs. Among California’s low-income, very-low-income, and extremely-low-income households—which account for 38 percent of the state’s population—nearly 100 percent are unable to afford the local cost of housing.⁶ Indeed, nearly 70 percent of low-income and very-low-income households would have to spend more than 50 percent of their income to afford the local cost of housing. Households that spend more than 50 percent of income on housing are referred to as “extremely cost burdened.” Such households are typically forced to make

⁵ The gap we have calculated is \$52 billion when considering local housing rental prices, and \$59 billion when considering local housing purchase prices amortized into monthly mortgage payments. Our analysis does not identify whether each household rents or purchases housing.

⁶ Under state guidelines, “low-income households” are defined as households earning 50 to 80 percent of area median income (AMI), “very-low-income households” are defined as households earning 30 to 50 percent of AMI, and “extremely-low-income households” are defined as households earning 0 to 30 percent of AMI.

trade-offs between paying for housing and obtaining other necessities such as food, medicine, and transportation (Exhibit 5).⁷

Exhibit 5

Nearly 100 percent of low-income Californians cannot afford the local cost of housing; more than half of those with moderate incomes are squeezed

Income level	Definition % of AMI	Total California households Million	Share of California households %	% unable to afford housing ¹	% extremely unable to afford housing ²
Above moderate	>120	6.1	49	5	0
Moderate	80–120	1.7	13	53	0
Low	50–80	1.8	14	96	40
Very low	30–50	1.6	13	100	97
Extremely low	<30	1.4	11	100	100

1 >30% of income required to cover local cost of housing.

2 >50% of income required to cover local cost of housing.

SOURCE: US Census Bureau; Zillow; McKinsey Global Institute analysis

CALIFORNIA'S HOUSING SHORTAGE COSTS MORE THAN \$143 BILLION PER YEAR IN LOST ECONOMIC OUTPUT—OR 6 PERCENT OF GROSS STATE PRODUCT

The housing shortage not only is costly for people renting or buying homes, but it also weakens California's economy as a whole. We calculate that the housing shortage costs the California economy between \$143 billion and \$233 billion per year. This estimate does not take into account broader costs to health, education, and the environment, and we therefore believe that it is conservative and that the real costs are likely much higher. There are three sources of cost to California's economy in our analysis (see the appendix for details on our methodology):

- Households that spend a large share of income on rent or mortgage payments have less money to spend elsewhere. We estimate that California's high housing costs crowd out \$53 billion to \$63 billion of consumption per year. For low-income households, even necessities such as food and clothing can be crowded out by housing.
- California's housing shortage is also a lost opportunity for the construction industry, which drives growth in the economy more broadly. Typically, every \$1 of output from the construction industry creates \$2.15 in total economic output. We estimate that lost construction activity costs the state economy \$85 billion to \$165 billion per year.⁸
- The housing shortage also contributes to homelessness. California has well over 100,000 homeless people—about one-quarter of the homeless population in the United

⁷ See, for instance, Betsy Baum Block et al., *Struggling to get by: The real cost measure in California 2015*, United Way of California, July 2015.

⁸ We assume direct economic output of \$260,000 per new housing unit, a 2.15 output multiplier for the construction industry, and therefore \$560,000 in total output per housing unit. "Missing" construction activity is defined as the difference between current production in California (approximately 100,000 units per year) and the production level required to close California's 3.5 million unit gap by 2025 (approximately 350,000 units per year).

States.⁹ In addition to the suffering that the homeless endure, the state spends \$5 billion per year to provide shelter, emergency room visits, policing, mental health interventions, and other services to this vulnerable population.¹⁰

To illustrate the breadth of the challenge, we looked in detail at four cities that vary widely in their demographics, income, and housing prices (see Box 2, “Four cities illustrate the breadth of California’s challenge”).

⁹ According to the US Department of Housing and Urban Development, there were 115,738 homeless people in California in 2015.
¹⁰ Shaun Donovan, former secretary of the US Department of Housing and Urban Development, has estimated that homeless people incur \$40,000 per year in public expense. Another report estimated an annual cost of around \$35,000 per person per year; see Daniel Flaming, Patrick Burns, and Michael Matsunaga, *Where we sleep: Costs when homeless and housed in Los Angeles*, Economic Roundtable, 2009. Former White House homelessness policy czar Philip Mangano has estimated that each homeless individual costs taxpayers \$35,000 to \$150,000 per year.

Box 2. Four cities illustrate the breadth of California’s challenge

San Francisco, Los Angeles, Watsonville, and Fresno can serve as archetypes for California’s housing challenge (Exhibit 6).

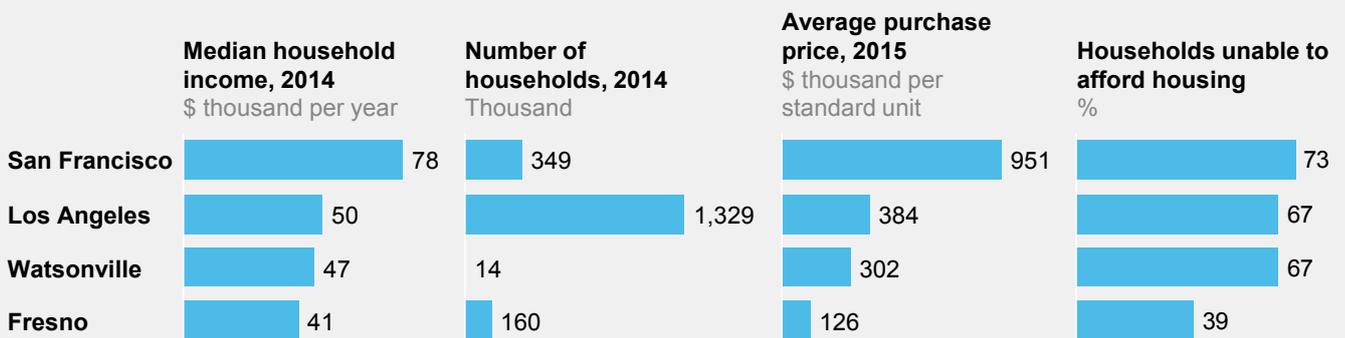
San Francisco is a dense city with a booming, innovation-focused economy and record-setting real estate prices that make the cost of housing unaffordable to 73 percent of households. Los Angeles is a much larger city, with lower real estate prices and significantly lower average incomes; 67 percent of its households find housing unaffordable. Watsonville is a small farming community, but its housing is nearly as expensive of that of Los Angeles, and 67 percent of residents cannot afford the cost of housing. Fresno stands in contrast to the three

other cities—it has a median income similar to that of Los Angeles and Watsonville, but housing is much cheaper, narrowing the affordability gap to 39 percent of households.

The varying situations in these cities demonstrates that California needs to develop a wide range of tools to address its housing affordability gap. Building housing on vacant urban land might play a major role in Fresno but only a small role in San Francisco, where vacant land is scarce and expensive. Los Angeles, with 1.3 million households, will require different solutions from Watsonville, which has 14,000.

Exhibit 6

Four archetype cities for California’s housing challenge



Key industries	San Francisco	Tourism, technology, biotechnology, financial services
	Los Angeles	Entertainment, tourism, services, manufacturing
	Watsonville	Agriculture
	Fresno	Agriculture, government

2. FIFTEEN TOOLS FOR CLOSING THE GAP

California needs to identify “housing hot spots” where large numbers of housing units could be built with attractive returns, unlock this supply by removing barriers to developing housing on this high-potential land, cut the cost and risk of producing housing, and ensure that low-income and vulnerable individuals have access to this housing.

We have identified 15 tools that could help close the gap between supply and demand in California’s housing market. The philosophy behind these tools is that they are practical approaches that can be employed by communities. These tools fall into four categories:

- Five tools could help California communities identify the right land for new housing
- Two tools could remove barriers to developing housing on this high-potential land
- Five tools could cut the cost and risk of producing housing
- Three tools could help to ensure housing access for citizens who are priced out of the market

FIVE TOOLS TO HELP COMMUNITIES IDENTIFY THE RIGHT LAND FOR NEW HOUSING

In the face of a housing crisis, we estimate that California has room to add more than five million new housing units in a number of housing hot spots. In every community, the volume and type of new housing will depend on local factors, such as the availability of land, the financial viability of development, household demographics, local preferences, and affordability.¹¹ Delivering housing choice to California’s residents means building traditional single-family homes, as well as accelerating production of higher-density housing and transit-oriented housing (Exhibit 7).¹²

The five tools in this category are:

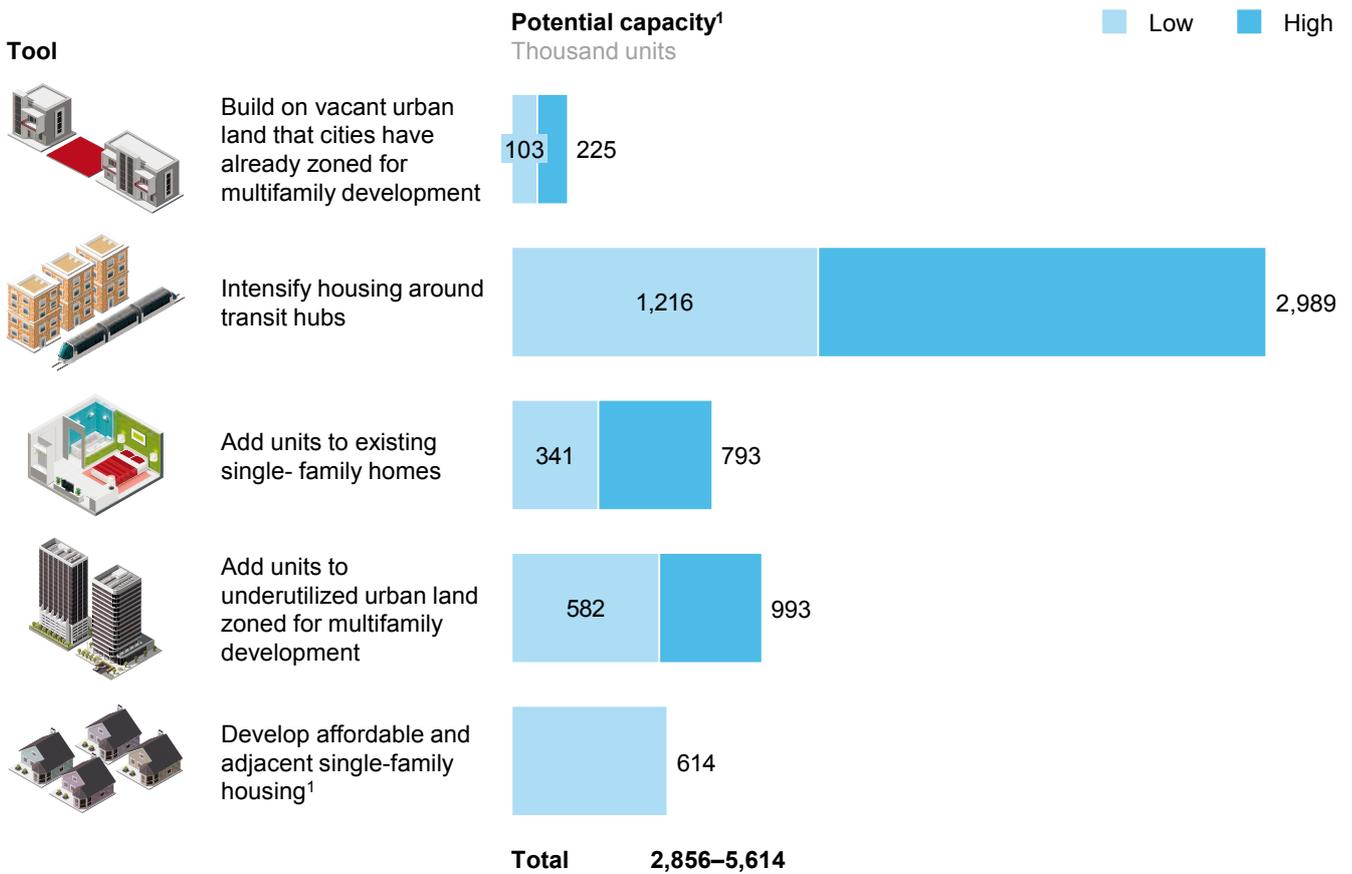
- Build on vacant urban land that cities have already zoned for multifamily development
- Intensify housing around transit hubs
- Add units to existing single-family homes
- Add units to underutilized urban land zoned for multifamily development
- Develop affordable and adjacent single-family housing

¹¹ Our estimate of five million potential units represents physical capacity for new housing in California; we have not attempted to address the economic feasibility of building this new supply in various communities across the state.

¹² Seventy percent of California’s housing stock is single-family homes, and California currently produces two single-family units for every one multifamily unit.

Exhibit 7

California has room to build more than five million new units in “housing hot spots”



1 Estimate for single-family potential capacity is highly conservative as it examines only three counties: Sacramento, San Bernardino, and Contra Costa.

SOURCE: McKinsey Global Institute analysis

Tool 1: Build on vacant urban land that cities have already zoned for multifamily development

Where should California put the 3.5 million housing units it needs to build over the next ten years? As a starting point, California could prioritize infill development on vacant urban land that cities have already zoned for multifamily development. By increasing the stock of urban housing and reducing the amount of underutilized urban land, multifamily infill projects can enliven cities, reduce the number of cars on the road, and raise economic productivity. Focusing on cities rather than “building outward” also preserves agricultural land and open space.

In California cities with populations of more than 100,000 people, we conservatively estimate that there is capacity to build 103,000 to 225,000 housing units on vacant land that has already cleared the multifamily zoning hurdle (Exhibit 8). One-third of this opportunity is in Los Angeles County. This estimate applies only to vacant and already-zoned urban land capacity and does not account for whether it is economically feasible to build housing on this land.¹³

Exhibit 8

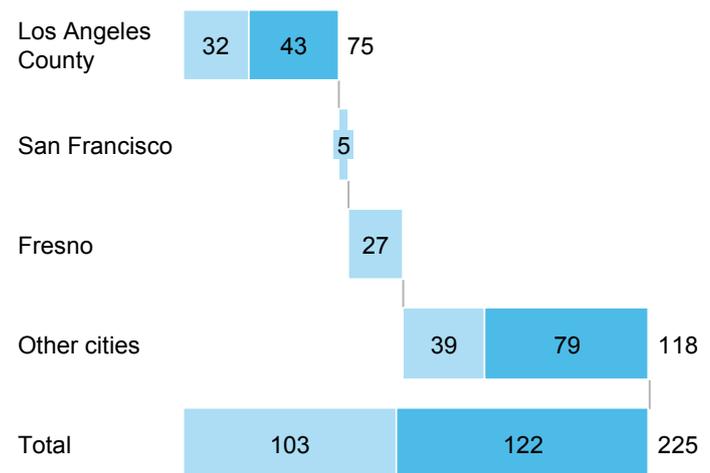
California could gain 103,000 to 225,000 units by building on vacant land already zoned for multifamily development

Potential units identified through GIS mapping¹

	Los Angeles ²	San Francisco	Fresno
Existing residential units Thousand	3,300	362	179
Potential multifamily units on vacant land zoned for multifamily Thousand	32–75	4.5	27
Potential unit increase %	1–2	1	16

Units projected for California cities with 100,000+ residents³

Thousand housing units



1 Geographic information system.

2 Refers to Los Angeles County.

3 Only cities with total population over 100,000 are included. We assumed that these cities can add 1–3% more units on vacant land zoned for multifamily development, based on observed ratios in Los Angeles, San Francisco, and Fresno.

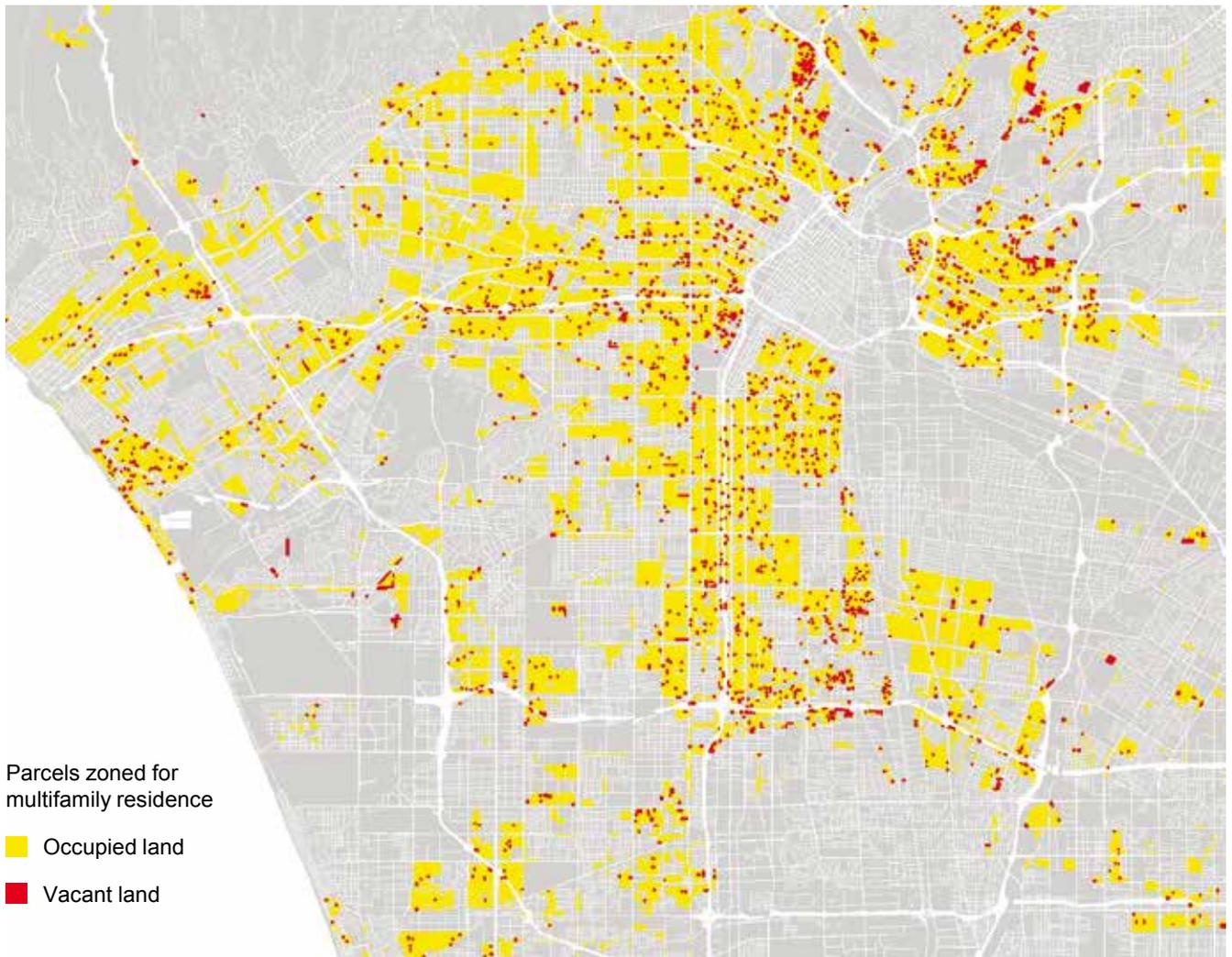
SOURCE: US Census Bureau; McKinsey GIS (geographic information system) analysis; McKinsey Global Institute analysis

¹³ Key factors relating to economic feasibility include the price of land, finished unit price (rental or sale), the cost of vertical construction, the affordability threshold, and the time and risk incurred in the process of approving projects. In a non-core market, for instance, finished unit prices may be lower than in core markets such as San Francisco and Los Angeles, but vertical construction costs for high-rise construction could be the same. As a result, it may be uneconomic to build to high-rise densities in non-core markets, even when parcels are zoned to high-rise density.

To arrive at this statewide estimate, we mapped vacant parcels zoned for multifamily development in several California cities. We found that Los Angeles County has 5,600 to 8,900 vacant parcels zoned for multifamily development. Combined, these parcels of land amount to 2.38 to 5.53 square miles with capacity for 32,000 to 75,000 housing units.¹⁴ Building these units would increase Los Angeles County’s housing stock by 1 to 2.3 percent (Exhibit 9).

Exhibit 9

Los Angeles County has 5,600 to 8,900 vacant parcels zoned for multifamily use, with zoned capacity for 32,000 to 75,000 units



NOTE: Vacant parcels shown larger than actual size to improve legibility.

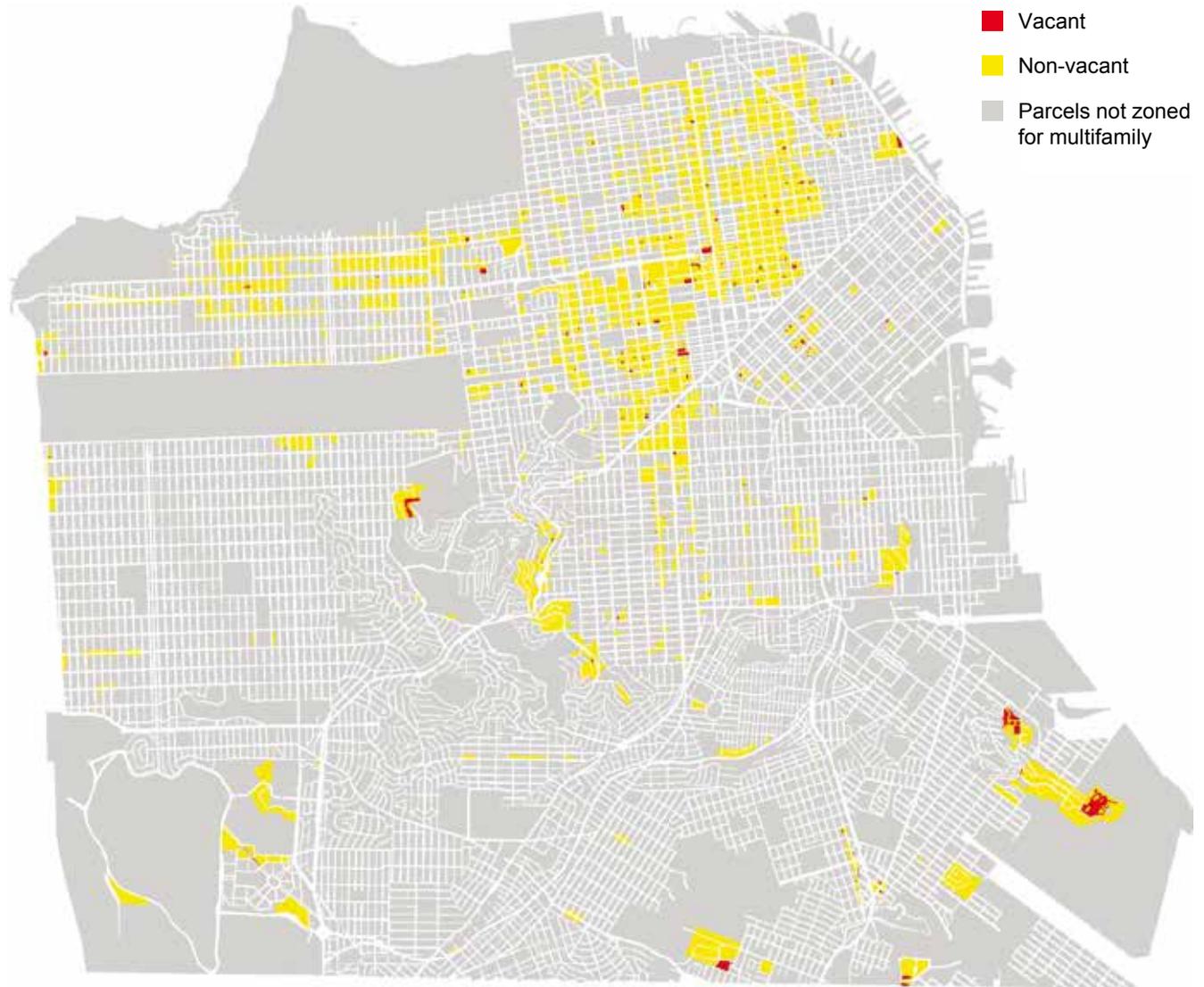
SOURCE: Los Angeles County GIS Data Portal; McKinsey GIS analysis; McKinsey Global Institute analysis

¹⁴ Los Angeles County GIS Data Portal; McKinsey GIS analysis.

San Francisco has 373 vacant parcels zoned for multifamily development, which amount to 0.08 square miles and capacity for 4,500 housing units. Building these units would increase San Francisco's housing stock by 1.2 percent (Exhibit 10).¹⁵

Exhibit 10

San Francisco has 373 vacant parcels zoned for multifamily use, with zoned capacity for 4,500 units



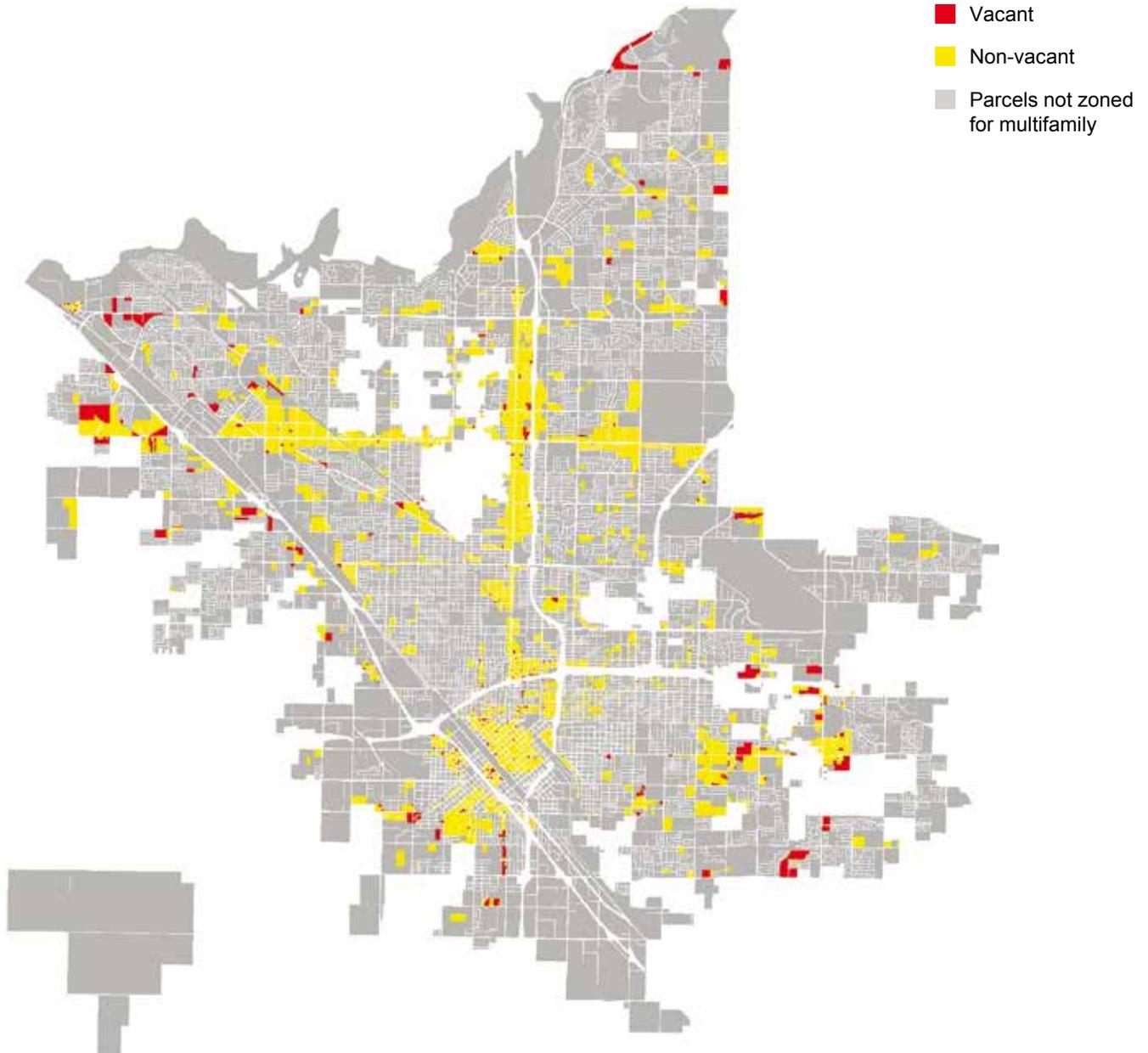
SOURCE: San Francisco Planning Department; McKinsey GIS analysis; McKinsey Global Institute analysis

¹⁵ San Francisco Planning Department; McKinsey GIS analysis.

Fresno has 641 vacant parcels zoned for multifamily development, amounting to a land area of 1.68 square miles, with capacity for 27,000 housing units.¹⁶ Building these units would increase Fresno's housing stock by 15.6 percent (Exhibit 11).

Exhibit 11

Fresno has 641 vacant parcels zoned for multifamily use, with zoned capacity for 27,000 units



SOURCE: City of Fresno; McKinsey GIS analysis; McKinsey Global Institute analysis

At an aggregate level, these vacant parcels should be economically attractive to develop because they are located in urban areas where the capacity to build is constrained. Moreover, vacant sites imply no demolition costs and no costs for accommodating current tenants. Vacant urban infill sites, however, may require environmental remediation and significant infrastructure upgrades. If 10,000 to 25,000 of these units could be created every year, construction could be completed by 2025.

¹⁶ City of Fresno; McKinsey GIS analysis.

To pursue this opportunity, communities could begin by taking the following four measures:

- **Increase transparency:** Inventory and publicize vacant sites in an accessible format.
- **Incentivize owners to bring vacant sites to market:** Impose a higher marginal tax rate on idle urban land than on improved urban land, or assess vacant sites as if they contained buildings and improvements comparable to surrounding plots. Harrisburg, Pennsylvania, has put such a tax into effect.
- **Accelerate approvals:** Accelerate land-use approvals for housing developments on vacant urban land that is already zoned for multifamily development.
- **Incentivize infill:** Provide incentives for development on vacant sites, such as property tax holidays or partial public funding for infrastructure upgrades.

Tool 2: Intensify housing around transit hubs

California's major cities need to create significantly more housing. But cities such as Los Angeles, Sacramento, San Diego, and San Francisco cannot create enough housing within city limits to eliminate the affordability gap, given current land prices and allowable densities. Transit-oriented development is a solution to this problem.

Transit-oriented development creates compact, mixed-use communities clustered around public transit hubs. Transit stations connect residents to job centers, and, just as importantly, transit stations become community catalysts in their own right, featuring parks, retail, restaurants, an improved pedestrian environment, and diverse housing choices.¹⁷ California's Sustainable Communities and Climate Protection Act of 2008 prioritized housing development within a half-mile radius of high-frequency public transit terminals. San Jose has embraced these principles in its 2040 general plan, which channels housing growth into 70 mixed-use "urban villages" clustered around transit stations. Locating housing on public transit lines increases connectivity and convenience while reducing sprawl, highway gridlock, and greenhouse gas emissions.

We estimate that by increasing housing density around high-frequency public transit stations, California could build 1.2 million to 3 million units within a half-mile radius of transit. This estimate is based on geospatial analysis of 1,095 high-frequency transit stations in California. The total comprises 1,083 existing high-frequency transit stations that would account for more than 95 percent of the estimated potential units and 12 high-speed rail stations that are planned, which could hold an additional 40,000 units (Exhibit 12).¹⁸ Breaking down the opportunity by region, we find that, in our "high case," 34 percent, or one million units, would be in the Bay Area; 8 percent, or 245,000 units, in the Sacramento area; and 30 percent, or 903,000 units, in the Los Angeles area. Statewide, building these 1.2 million to 3 million units over a 20-year period would translate into creating 60,000 to

¹⁷ For more information, see the US Federal Transit Administration website, www.transit.dot.gov.

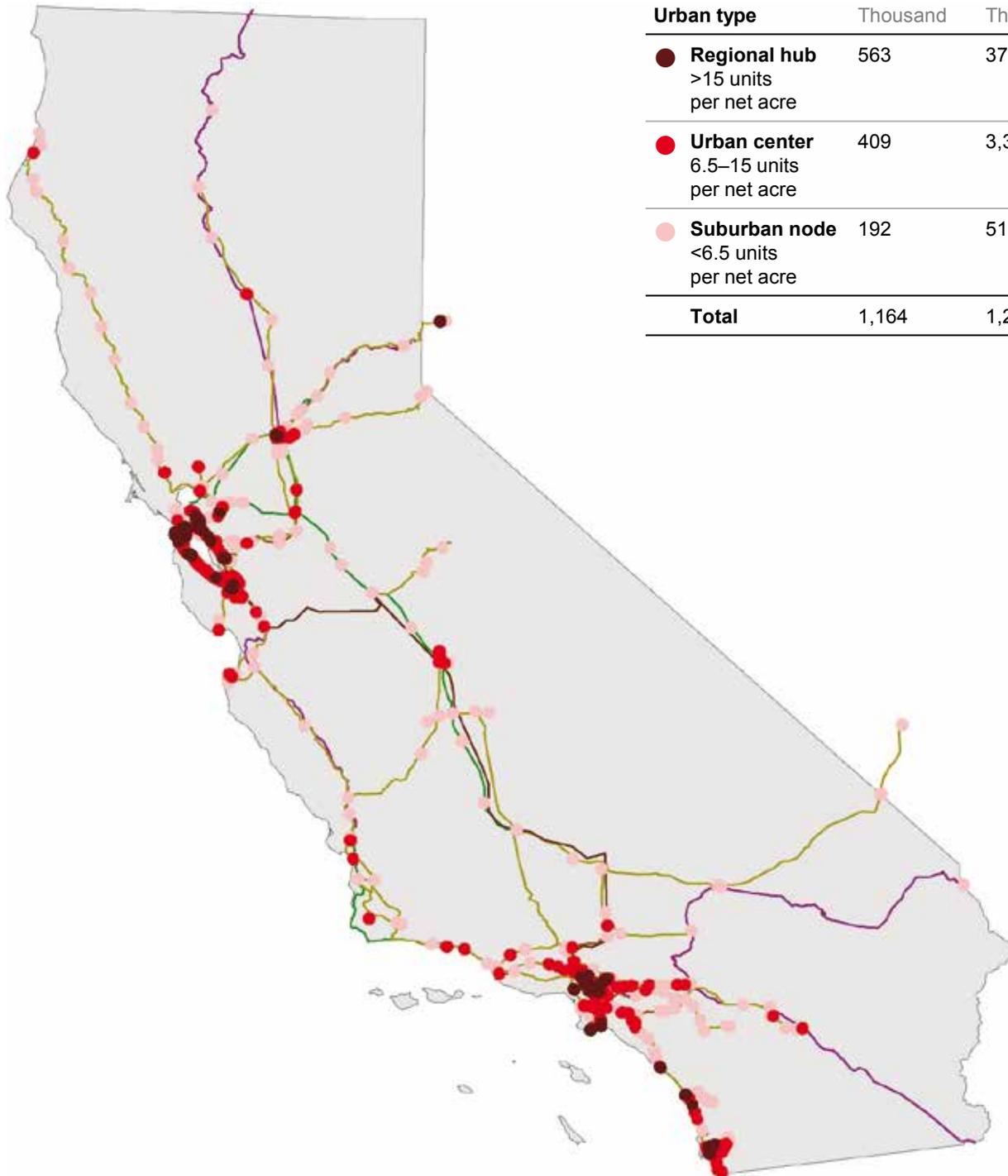
¹⁸ Our estimate takes into account the characteristics of land surrounding each of the 1,095 transit stations. We filtered out regions classified as rural or remote that are thinly populated and unlikely to be developed for transit-oriented housing over the next 50 years. Within each station area, we screened out non-developable land and assumed that one-third of developable land will be used for commercial purposes. On the remaining land—developable residential space—we assumed that 10 percent would be needed for roads and other public spaces rather than homes. We calculated the housing potential on developable residential land by assuming two scenarios. In our low case, there is one new housing unit per net acre for every 100 existing units within the transit-oriented development area. In our high case, station areas "upshift" to the density of the next urban type. So, suburban nodes (with fewer than 6.5 units per net acre) are developed to the average current density of urban centers, at ten units per net acre. Urban centers (with 6.5 to 15 units per net acre) are developed to the average current density of regional hubs, at 31 units per net acre. And regional hubs (with more than 15 units per net acre) upshift to 31 units per net acre if they are currently below that density, and if they already have more than 31 units per net acre, we use the station area's low-case density potential. To avoid double-counting the transit-oriented development housing opportunity with other tools discussed in this paper, we subtracted opportunities in transit areas that were identified for potential infill on vacant land (Tool 1) or redevelopment of underutilized land (Tool 4).

150,000 units annually, or roughly 500,000 to 1.3 million units by 2025. These transit areas represent only 0.15 percent of California's total land mass, yet they have disproportionate potential to rebalance California's housing supply.

Exhibit 12

California has capacity to create between one million and three million housing units within half a mile of transit hubs

Potential sites for transit-oriented housing



Urban type	Existing units Thousand	Additional units ¹ Thousand
● Regional hub >15 units per net acre	563	379
● Urban center 6.5–15 units per net acre	409	3,321–938
● Suburban node <6.5 units per net acre	192	516–1,672
Total	1,164	1,216–2,989

1 Low end of range assumes one unit per net acre is added for every 100 existing units; high end assumes development to the next urban density level.

SOURCE: Bay Area Metropolitan Transportation Commission; San Diego Regional Data Warehouse; Sacramento County GIS portal; Los Angeles GIS Portal; Fresno Bus Rapid Transit Master Plan; Amtrak; California High-Speed Rail Authority; McKinsey GIS analysis; McKinsey Global Institute analysis

What would this look like? New development must be sensitive to the character of a place, and our density assumptions vary depending on the current land uses and residential density in each transit area.¹⁹ In our high case (3 million new units), suburban nodes with fewer than 6.5 units per net acre, such as Alameda Gateway Ferry Terminal, Lockheed Martin Transit Center in Sunnyvale, and 4800 Tracy Boulevard in Tracy, would be developed to a density of ten units per net acre, suggesting walkable, mixed-use villages of single-family and town house–style residences. Urban centers with 6.5 to 15 units per net acre, such as Virginia Light Rail Station in San Jose, Firestone Metro Station in Los Angeles, and Kings Canyon-Chestnut Bus Rapid Transit Stop in Fresno would be developed to a density of 31 units per net acre, suggesting two- to four-story buildings in town house or multifamily configurations, co-located with jobs centers and diverse street-level uses. Finally, regional hubs which currently have more than 15 units per net acre, such as Wilshire & Vermont Metro Station in Los Angeles, would be developed to a high urban density of up to 70 units per net acre.

Potential catalysts for local communities to intensify housing in transit areas include:

- **Rezone station areas:** Communities could proactively rezone station areas for higher residential density, paving the way for private investment.
- **Accelerate approvals:** Communities could accelerate land-use approvals in priority transit areas.
- **Deploy public financing:** Communities could finance station-area infrastructure and housing through tax increment bonds.

Tool 3: Add units to existing single-family homes

A third tool is to add units to some of California’s more than seven million single-family homes. In San Francisco and Los Angeles, 93 percent of the residential land area is dedicated to single-family housing. Many homeowners would like to create an additional unit on their property, such as a garage apartment, basement apartment, or backyard cottage. These units could house an elderly family member, an adult child who has returned home, or a renter who could boost household income. This type of unit is known as an accessory dwelling unit.

We estimate that California could add up to 790,000 housing units by allowing homeowners to adapt their homes in these ways. The initial focus could be in neighborhoods close to transit stations, where large single-family homes represent a suboptimal use of land.

Accessory dwelling units are inherently affordable because they use existing land, buildings, and infrastructure. One unit can be created for less than \$25,000, compared with the hundreds of thousands of dollars typically required to build a conventional housing unit. These units are also a way to add housing in high-cost cities that are already “built out.” Cities such as Berkeley, Santa Monica, and San Diego have a dearth of vacant parcels, but they have an abundant supply of privately owned houses and backyards that are fertile ground for microscale housing. Adding units inside existing units creates “invisible density.”

Co-living, a rental model based on the shared use of a large home, is another tool. A co-living developer such as Open Door in Oakland might obtain a 3,500-square-foot house previously occupied by a family of four, and rent it to eight unrelated individuals who commit to a culture of shared use. While sharing a house with roommates is not a new

¹⁹ For all station areas, our assessment of current density—and, therefore, our urban type classification—accounts for only current residential units, not current commercial uses. Thus, our assessment is conservative, in that it may underestimate the urban type for station areas that contain dense commercial uses but few residential units.

concept, co-living is an emerging category of real estate that professionalizes shared living models.²⁰ Co-living results in high-density, energy-efficient, and affordable housing without government subsidies. In a co-living model, the floor space per inhabitant is typically 300 to 400 square feet, and the monthly rent for such a unit in Oakland or Berkeley is typically \$1,000 per month, which is half the cost of a studio apartment. For owners, the business model in California yields cash-on-cash returns of 8 to 9 percent, which can match or exceed yields on traditional multifamily assets.

Homeowners in California who want to add capacity through such arrangements face several hurdles including local zoning restrictions and off-street parking requirements that can make approvals nearly impossible, and local fees such as utility hookup charges that treat small, in-home units as new residences, making small projects uneconomic. We find that there are three ways that municipalities can encourage homeowners to add units to existing single-family homes:

- **Reduce barriers to the creation of accessory dwelling units:** Cities such as Oakland and Berkeley have changed their local zoning codes to help homeowners create accessory dwelling units. Assembly Bills 2299 and 2406 propose similar changes at the state level, including waiving off-street parking requirements, expediting approvals and permitting, and linking fees to the size of units.
- **Proactively encourage homeowners to create accessory dwelling units and co-living spaces:** San Mateo County is using geospatial mapping to identify homes that have room to add an accessory dwelling unit, and is proactively approaching those homeowners.
- **Provide an amnesty path for black market accessory dwelling units:** By one estimate, illegal accessory dwelling units represent up to 8 percent of San Francisco's housing stock.²¹ Legitimizing these units would boost building code compliance and raise property tax revenue.

Tool 4: Add units to underutilized urban land zoned for multifamily development

In California's cities, a significant portion of land zoned for multifamily residential use is not vacant but is underutilized. In Los Angeles, for example, a single-story apartment building built in the 1930s might have four units, with most of the lot area dedicated to parking. But the lot may be zoned for ten units—implying 40 percent utilization of zoned capacity. Six additional units could be built on the lot under the city's existing zoning ordinance. Many of the state's multifamily parcels were built more than half a century ago, before there was a need to increase density to address the state's housing shortage.

We conservatively estimate that there is capacity to build 580,000 to 990,000 units on underutilized multifamily parcels in the state's major cities by bringing multifamily properties up to approved density levels. Redeveloping these properties would not require rezoning, but would nevertheless pose significant challenges. Large-scale redevelopment could displace households or communities and therefore requires policies and resources to mitigate displacement. Given these challenges, we consider a 30-year horizon appropriate to capture this full opportunity, with the potential to create 200,000 or more of these units by 2025.

²⁰ Companies like Open Door professionalize communal living through real estate development, acquisition, management, and leasing while facilitating tenant culture and experience (e.g., communal cooking and cleaning).

²¹ Karen Chapple et al., *Yes in my backyard: Mobilizing the market for secondary units*, Center for Community Innovation, 2011.

To determine the size of the opportunity, we mapped every land parcel in two counties: San Francisco and Los Angeles. We examined existing density on every residential parcel and identified parcels zoned for multifamily use that contain multifamily buildings that are not fully utilizing zoned capacity. If a building utilized more than 50 percent of zoned capacity, we assumed that it would be uneconomic to redevelop; if it utilized less than 50 percent, we identified it as a redevelopment opportunity.

This detailed geospatial analysis revealed that 31 percent of San Francisco's multifamily parcels are underutilized, which means the city could add 70,500 units under current zoning. That is a 19 percent increase over San Francisco's current 362,000 total housing units (Exhibit 13).²² In Los Angeles, we found that 28 percent of multifamily parcels are underutilized, potentially adding 306,000 units under current zoning—a 9 percent increase over the city's 3.3 million existing units (Exhibit 14). Based on these findings, we projected the opportunity for California cities with more than 100,000 inhabitants by assuming a 5 to 15 percent increase over the existing stock.

To pursue this opportunity, California could do the following:

- **Mitigate displacement risk:** Allocate resources and develop policies to enable large-scale redevelopment without displacing current residents, such as preferential or discounted tenancy in new buildings.
- **Publicize underutilized land:** Attract private investment by highlighting properties where value could be created by fully utilizing existing zoning.
- **Create zoning and building code carve-outs:** Enable property owners to pursue creative solutions to add units without demolishing current structures, such as by building over or adjacent to existing structures on a parcel.

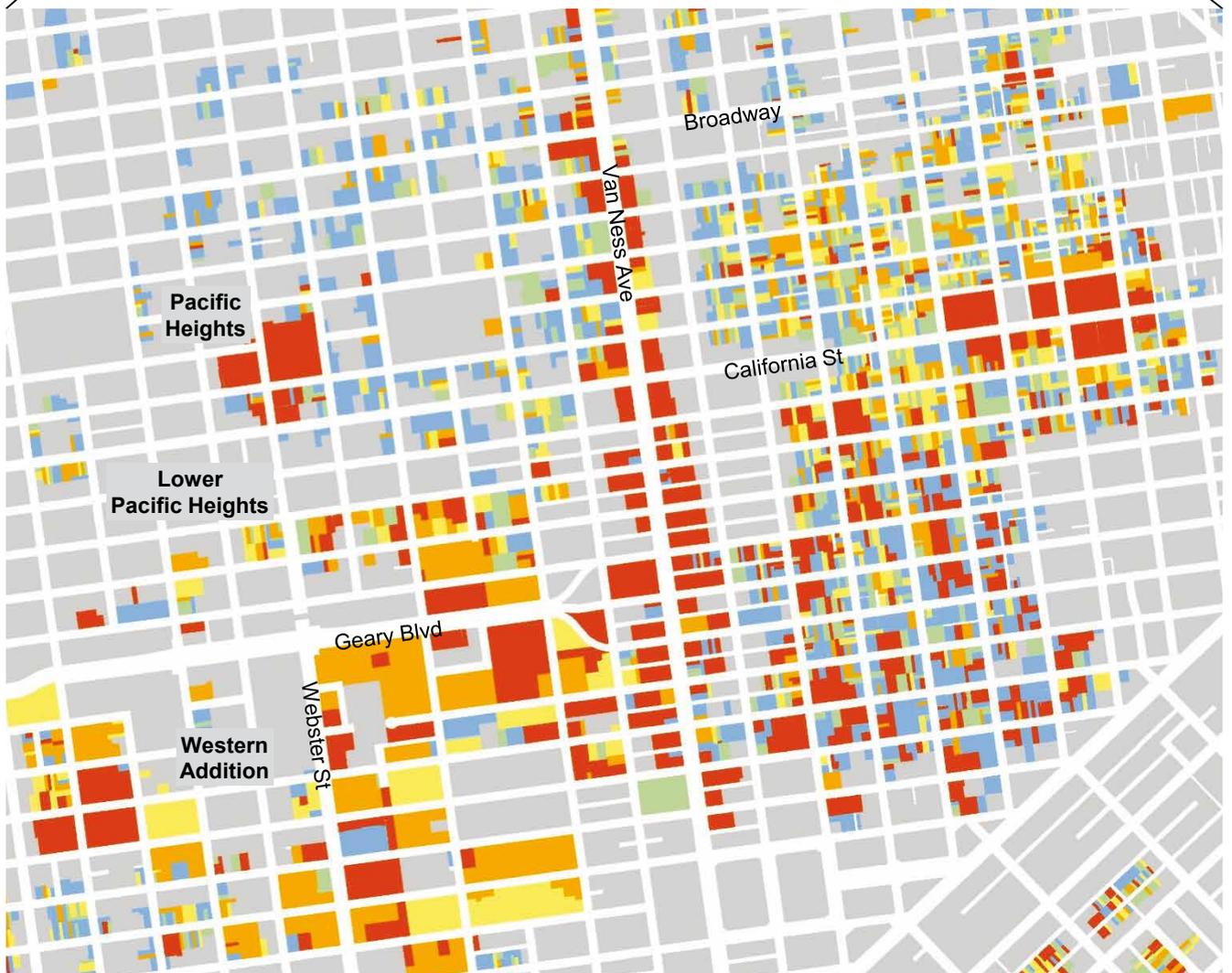
²² In our analysis, we base our estimate of underutilized land on the highest dwelling units permitted under current zoning, compared with the current unit-to-parcel ratio. We do not include parcels that are zoned for multifamily use but are currently used for single-family housing. Parcels with a utilization rate that exceeds 100 percent are either grandfathered into current code or have special zoning permissions.

Exhibit 13

In San Francisco, 31 percent of multifamily parcels use less than 50 percent of zoned capacity, with potential to add 70,500 units under current zoning



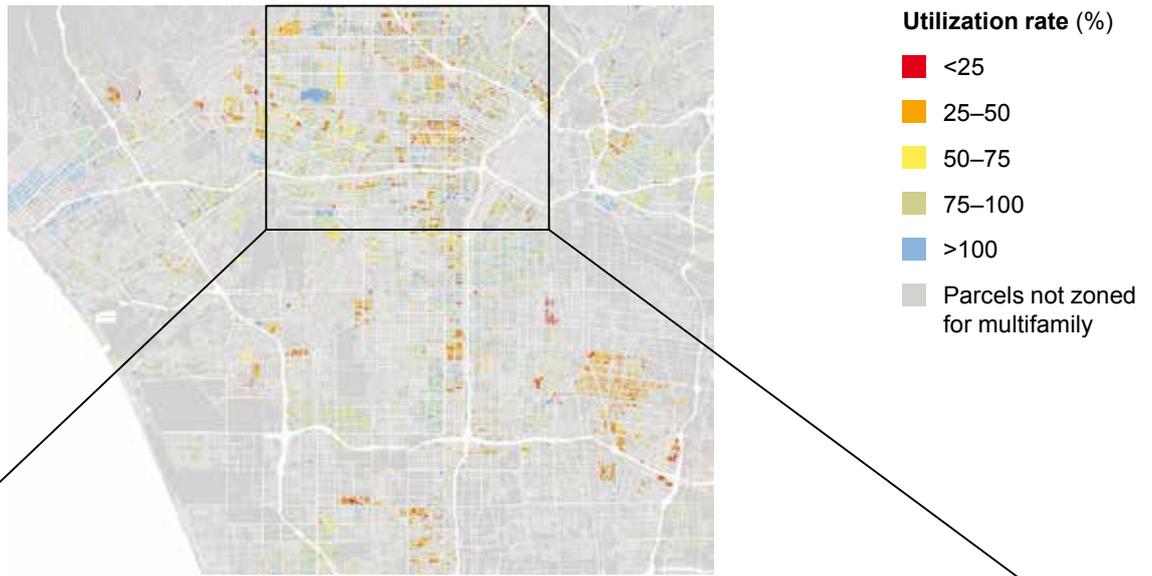
A closer look at San Francisco's multifamily utilization



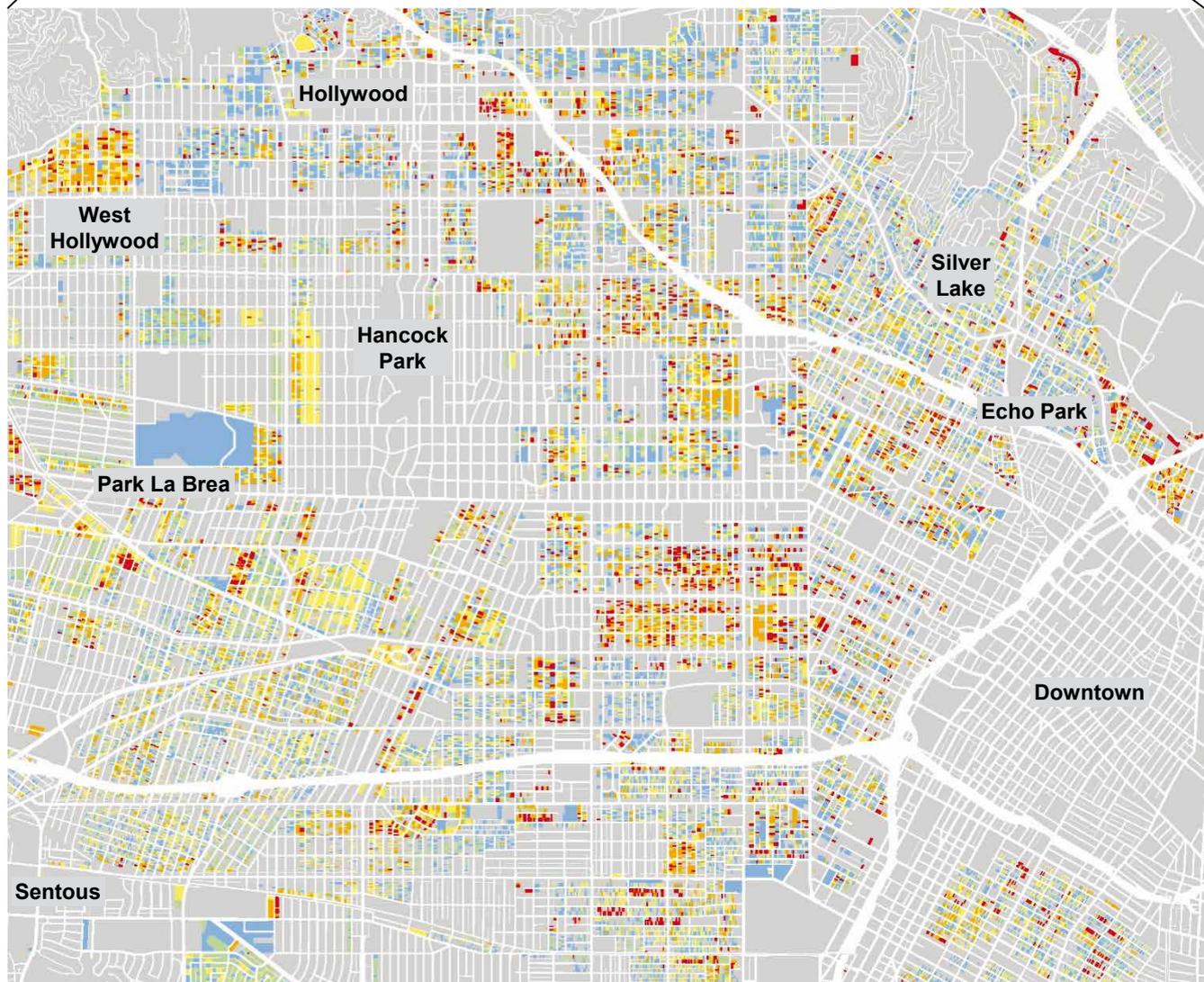
SOURCE: San Francisco Planning Department; McKinsey GIS analysis; McKinsey Global Institute analysis

Exhibit 14

In Los Angeles County, 28 percent of multifamily parcels use less than 50 percent of zoned capacity, with potential to add 306,000 units under current zoning



A closer look at Los Angeles County's multifamily utilization



SOURCE: Los Angeles County GIS data portal; McKinsey GIS analysis; McKinsey Global Institute analysis

Tool 5: Develop affordable and adjacent single-family housing

To meet market demand, a share of California's new housing supply must be built on land currently dedicated to non-residential uses such as agriculture. Such greenfield development typically involves building infrastructure, roads, and new neighborhoods. In many cases, greenfield growth can supply homes at lower cost than infill projects due to lower land costs and economies of scale on multiacre production sites.

To increase access to housing and reduce urban sprawl in California, greenfield development of single-family homes should optimize for affordability and adjacency to existing development. We quantified the opportunity to build single-family homes in California in accordance with "smart-growth" principles, including small lot sizes to increase affordability, adjacency to existing development, and proximity to jobs and transit.

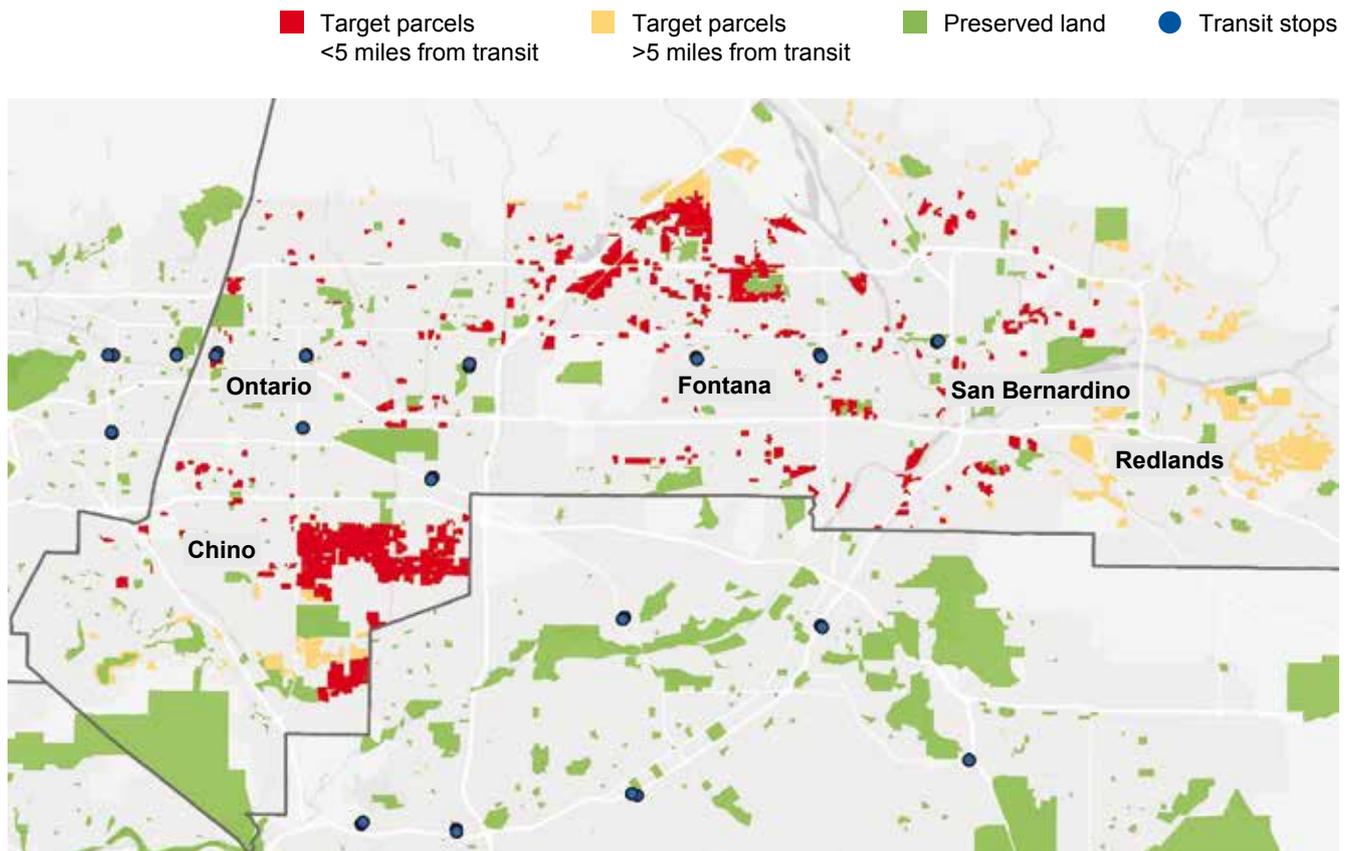
To estimate the opportunity, we first screened for open parcels larger than five acres that fall either within 20 miles of jobs centers to enable a reasonable car commute, or within five miles of public transit hubs to enable a "park and ride" commute. Second, we screened for parcels within one mile of existing development (or falling within an urban growth boundary, where applicable) in order to prevent sprawl and leapfrog development. We also screened out parcels that are legally preserved for open space or agricultural purposes. Finally, we assumed that single-family homes could be built on these parcels at a density of 15 units per acre in order to create a small-lot, affordable single-family product.

Using this methodology, we identified more than 600,000 potential units in the counties we analyzed: San Bernardino, Sacramento, and Contra Costa. These counties are natural locations for housing growth, as they are adjacent to jobs centers and contain significant amounts of undeveloped land. We found that 53 percent of the overall opportunity is within five miles of public transit, and the remainder of the opportunity is within 20 miles of a jobs center.

In San Bernardino County we identified 368,000 potential single-family units that met our criteria. Slightly more than half of these potential units (196,000) are within five miles of a transit hub, and slightly less than half (172,000) are more than five miles from transit but within 20 miles of a jobs center. San Bernardino is a large county, with 490,000 existing housing units. Building these additional single-family units would increase the county's housing stock by 75 percent. The biggest greenfield opportunities are in Chino and Fontana (Exhibit 15).

Exhibit 15

San Bernardino County has 368,000 potential single-family units, with major opportunities in Chino and Fontana



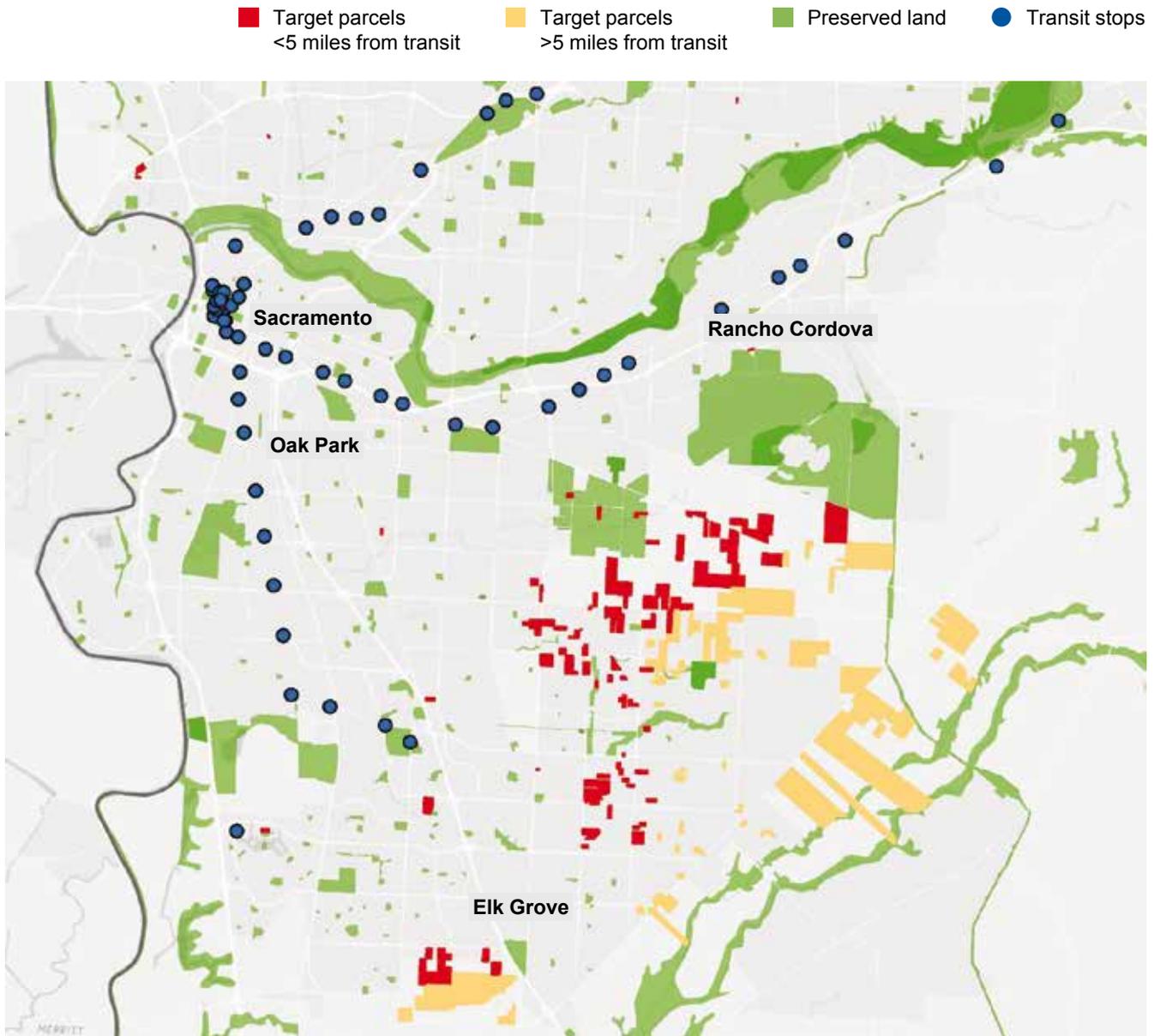
NOTE: Analysis excludes potential new single-family homes around existing development that is quite low density, i.e., target parcels are limited to those within one mile of land currently developed at a density of >800 people per square kilometer. Additionally, a topographic filter was applied to screen out certain parcels on mountainous terrain.

SOURCE: San Bernardino Associated Governments; McKinsey GIS Analysis; McKinsey Global Institute analysis

In Sacramento County, we identified 61,000 potential single-family units that met our criteria. Building these homes would increase the county's single-family housing stock by 16 percent. We found that 50 percent of these potential units are within five miles of a transit hub, such as a Sacramento Regional Transit light rail station. The remaining 50 percent are more than five miles from public transit but within 20 miles of a jobs center (Exhibit 16).

Exhibit 16

Sacramento County has 61,000 potential single-family units clustered between Rancho Cordova and Elk Grove



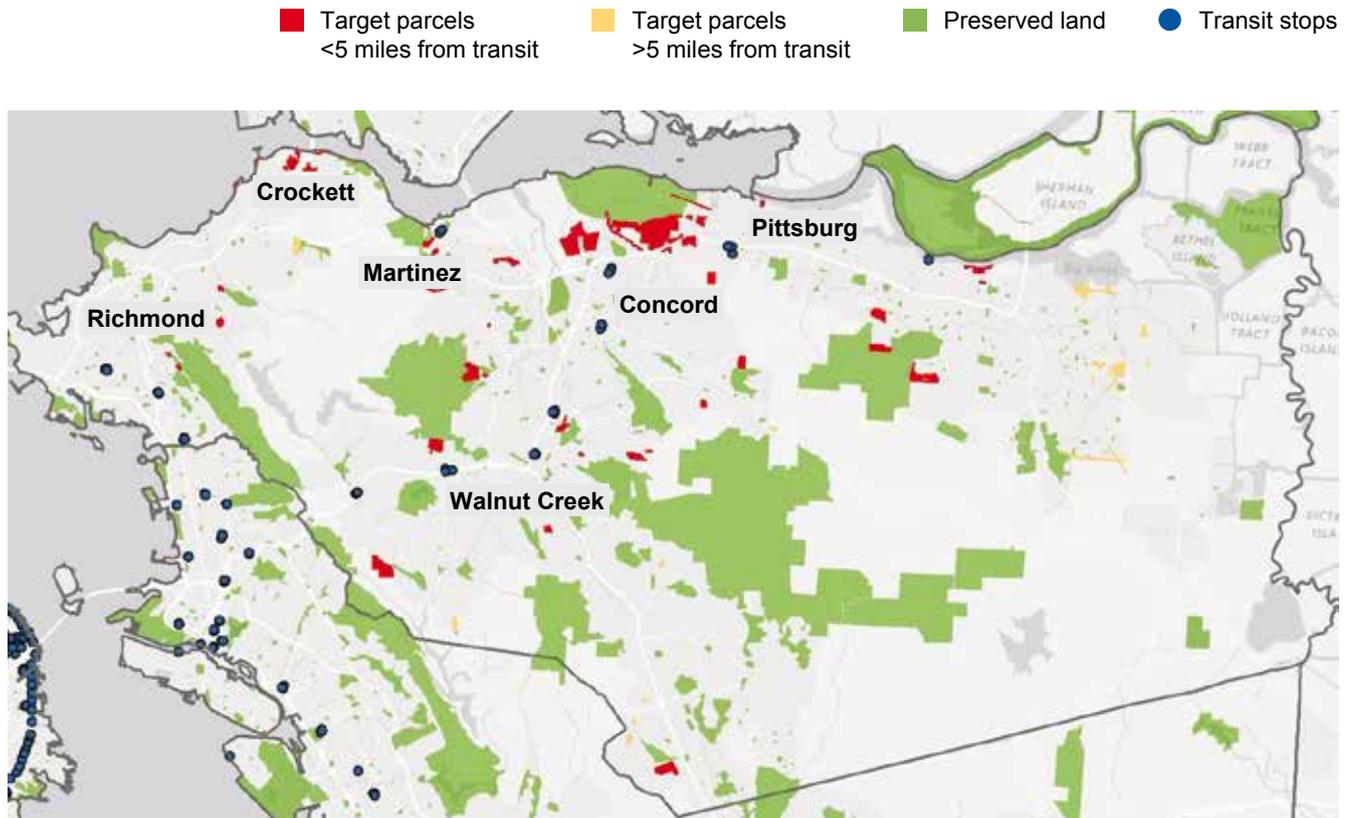
NOTE: Analysis includes parcels zoned for general agriculture and not legally preserved, or vacant land deemed ready for development by Sacramento County Planning Department. Excludes parcels outside Sacramento County's urban growth boundary.

SOURCE: Sacramento County GIS Data Library; McKinsey GIS Analysis; McKinsey Global Institute analysis

In Contra Costa County, we identified 185,000 potential single-family units that met our criteria. More than 100,000 of these (55 percent) are on parcels larger than 100 acres—significant tracts where new housing could be built on a large scale. Seventy percent of Contra Costa County’s potential units are within five miles of a transit hub, such as a Bay Area Rapid Transit (BART) station (Exhibit 17).

Exhibit 17

Contra Costa County has 185,000 potential single-family units, with major opportunities in Crockett, Martinez, and Pittsburg



NOTE: Analysis includes parcels either zoned for general agriculture or deemed “unrestricted” under Contra Costa County zoning. Excludes parcels outside Contra Costa County urban growth boundary.

SOURCE: Contra Costa Mapping Information Center; McKinsey GIS Analysis; McKinsey Global Institute analysis

Municipalities could encourage affordable, adjacent single-family construction in three ways:

- **Create smart urban growth zones:** Counties and cities could create urban growth zones to support residential growth adjacent to existing development, thereby conserving open space. Property taxes and development impact fees could vary by zone, thereby encouraging growth in the right places.
- **Invest in infrastructure preferentially:** Governments could preferentially build or finance infrastructure in smart-growth zones.
- **Zone for small-lot single-family:** Governments could proactively update zoning codes to enable subdivision into small lots, with appropriate lot setbacks and building heights to allow adequate lot utilization.

TWO TOOLS TO REMOVE BARRIERS TO APPROVING HOUSING DEVELOPMENT ON HIGH-POTENTIAL LAND

Once communities have identified high-potential land for housing, a major challenge in California is getting approval to build on any given piece of land. We have identified two tools that could trigger the development of housing in housing hot spots. These tools are:

- Incentivize local governments to approve already planned-for housing
- Accelerate land-use approvals

Tool 6: Incentivize local governments to approve already planned-for housing

Under California’s administrative system, there is broad consensus that the state needs more housing—but minimal incentive for cities to allow developers to build it. Instead of vying for new residents as a source of revenue and dynamism, many cities are concerned about the impact new residents could have on municipal finances and aging infrastructure.²³ Residents who bought their homes when the city looked a certain way want it to stay that way and may oppose development because of its impact on parking, traffic, schools, sight lines, or community character. City council members who make land-use decisions respond to homeowner voices, creating an environment where it is easier to say “no” to housing than “yes.”

To confront this local resistance to housing creation, the state’s housing element law mandates that every community set local housing production targets, but the law lacks the teeth to enforce these targets. Every eight years, the government conducts a Regional Housing Needs Assessment (RHNA) and assigns a certain number of target units to each region, which then determines production goals for each jurisdiction. Localities are required to zone and plan for these units but do not necessarily give developers approval to build them. There is little reason to raise low compliance rates; state funds for local public projects are usually provided regardless of housing performance.

If local governments were incentivized to raise housing performance by 30 percent over their performance in the last RHNA cycle, the state could produce approximately 40,000 more units annually, or a total of 330,000 units by 2025.²⁴ Current compliance rates leave much room for improvement, especially for the very-low-income, low-income, and moderate-income segments (Exhibit 18).

²³ One reason for this is the small share of property tax that is allocated to the city from a residential development. The city must provide municipal services for the development, yet a large share of the development’s property taxes flows to non-city entities such as the county, the school district, and special-purpose districts such as fire and water districts. In addition, affordable units built by non-profit organizations are exempt from property tax, since such units qualify for the “welfare exemption” outlined in the state constitution. For a given parcel, local governments would often rather approve developments that generate more revenue, such as retail projects, than housing. This “land-use fiscalization” is commonly cited as a barrier to residential development in California.

²⁴ Projection is based on the fifth RHNA cycle, which began in 2014 and will end in 2022.

Exhibit 18

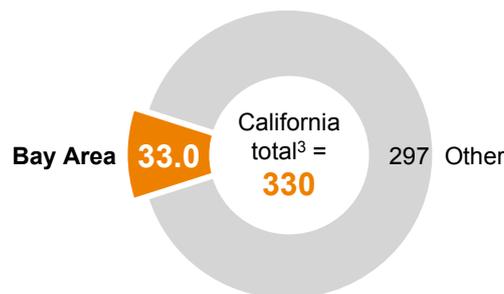
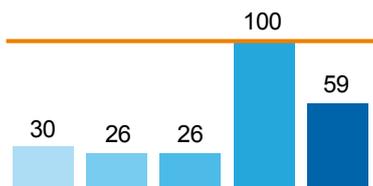
If local governments were incentivized to improve performance on state housing targets by 30 percent, 40,000 more units per year could be built

Income level % AMI Very low (0–50) Low (50–80) Moderate (80–120) Above moderate (>120) Total RHNA target

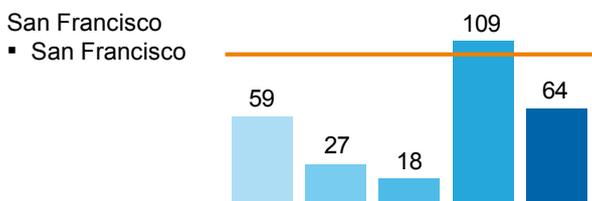
Additional units by improving RHNA performance, 2014–22²
Thousand

Baseline % RHNA met¹

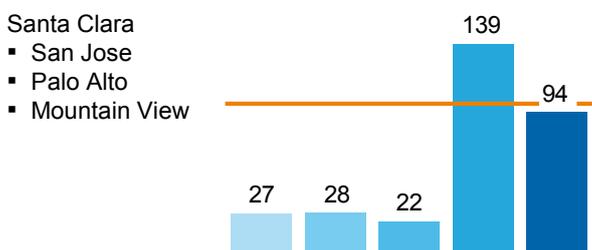
Bay Area



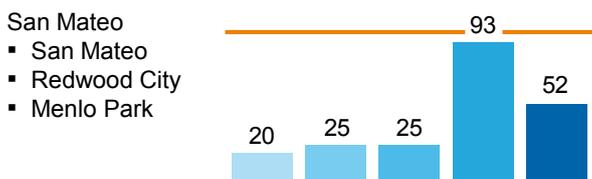
Selected Bay Area counties and major cities



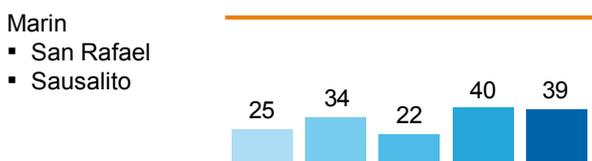
5.9



12.2



2.5



0.2

1 Based on fourth RHNA cycle (2007–14).

2 Estimate of units produced in the fifth RHNA cycle (2014–22), based on 30% improvement over counties' performance in fourth RHNA cycle (2007–14).

3 Ratio of Bay Area RHNA compliance to California RHNA compliance estimated using a population proxy, due to lack of statewide RHNA compliance numbers.

NOTE: Numbers may not sum due to rounding.

SOURCE: California Department of Housing and Community Development; US Census Bureau; Association of Bay Area Governments; McKinsey Global Institute analysis

State and local governments in California could design a system in which local governments benefit directly from creating housing, attracting residents, and helping to balance jobs and housing. Incentivizing local governments to approve already-planned-for housing could include four components:

- **Increase the property tax revenue allocated to cities that approve housing:** This incentive could be scaled depending on the type of housing, with additional bonuses for housing that includes an affordable component. The state could also subsidize a share of local property taxes for affordable units that are now exempt because their owners have non-profit status. This reallocation of property tax revenue could be viewed as an investment in local growth which would be repaid through increased construction and consumption of goods and services in the local economy.
- **Tie regional and state dollars to local housing performance:** State and regional funding could be linked to improvement in meeting RHNA allocations. For example, when the Association of Bay Area Governments tied \$350 million in One Bay Area transit grants to housing performance, local governments' compliance in RHNA reporting climbed from 53 percent to 100 percent. When the California Department of Housing and Community Development launched the Jobs-Housing Balance Incentive Program and the Workforce Housing Reward Program, which linked dollars to housing performance, compliance improved significantly.
- **Grant greater land-use autonomy to cities that meet their RHNA targets:** If the state were to pass a law streamlining land-use approvals for projects that meet critical housing needs, the state could also create carve-outs for cities that meet RHNA housing production targets.
- **Implement a “use it or lose it” law to enforce local zoning:** A Massachusetts law (Chapter 40B) holds municipalities accountable for approving zoning-compliant housing projects by allowing developers to appeal land-use decisions to regional zoning boards. California could consider a similar concept.

Tool 7: Accelerate land-use approvals

California's land-use approval process is largely discretionary, with power resting in local government bodies. This reality of decentralized decision making, coupled with community-based politics and the state's environmental review requirements, leads to a significantly longer and riskier entitlement process than in other jurisdictions.

A primary reason entitlement is so complex is the California Environmental Quality Act (CEQA), which applies to any discretionary action taken by a state or local governmental agency, including approvals for housing projects. CEQA mandates a comprehensive environmental review and public disclosure, including opportunities for public comment, for projects that meet certain parameters. The topics analyzed under CEQA can include as many as 18 subject areas, including water, air quality, transportation and greenhouse gas impacts. While CEQA aims to protect the environment by requiring a full review of the potential consequences of the proposed government action—a critical goal—the statute has come under scrutiny for enabling any opponent to a project, including a commercially motivated opponent, to delay or block the project by threatening a lawsuit under CEQA. Generally speaking, if a project opponent files a CEQA lawsuit, the project cannot commence until the litigation is resolved in favor of the government and the project sponsor. This can delay projects by months or years, and adds substantial risk to the entitlement process.

The result of this system is that land-use approvals for housing in California take six months on average for simple projects and more than three years on average for complex projects (Exhibit 19). This reduces housing production in California and results in higher costs for the state’s renters and homebuyers. On average, approval of single-family projects takes 17 months with a range of six to 39 months. In the case of multifamily homes, approvals take 15 months on average with a range of seven to 27 months. Certain housing projects, however, have taken more than a decade to be approved.

Exhibit 19

Land-use approvals for housing in California average six months for simple projects and 39 months for complex ones

■ Key focus area

	Single family				Multifamily			
	Sample projects ¹		Average entitlement process		Sample projects ¹		Average entitlement process	
	Number of units	Site size Acres	Duration Months	Number of continuances ²	Number of units	Site size Acres	Duration Months	Number of continuances ²
No rezoning or general plan amendment	108	42	6	3	62	5	7	3
Compliant with specific plan (streamlined process)	249	61	9	7	219	13	9	4
Zoning change or general plan amendment, but no EIR ³	132	52	9	5	187	7	9	6
EIR with no litigation	124	34	21	8	118	6	15	5
EIR with litigation	124	34	39	n/a	118	6	33	n/a

Easier ↑
Entitlement complexity
↓ Harder

1 Based on 2000 report from California Department of Housing and Community Development (see below).

2 Defined as a delay or postponement in the process.

3 Environmental impact report.

SOURCE: Expert interviews; *Raising the roof: California housing development projections and constraints, 1997–2020*, California Department of Housing and Community Development, 2000; McKinsey Global Institute analysis

Most developers and individual property owners confront not only long and uncertain timelines, but also high land holding costs and additional expenses for engineers, architects, lawyers, and staff overhead while awaiting approval. Time costs, driven mainly by the entitlement process, can contribute 30 percent of the finished cost of a home.

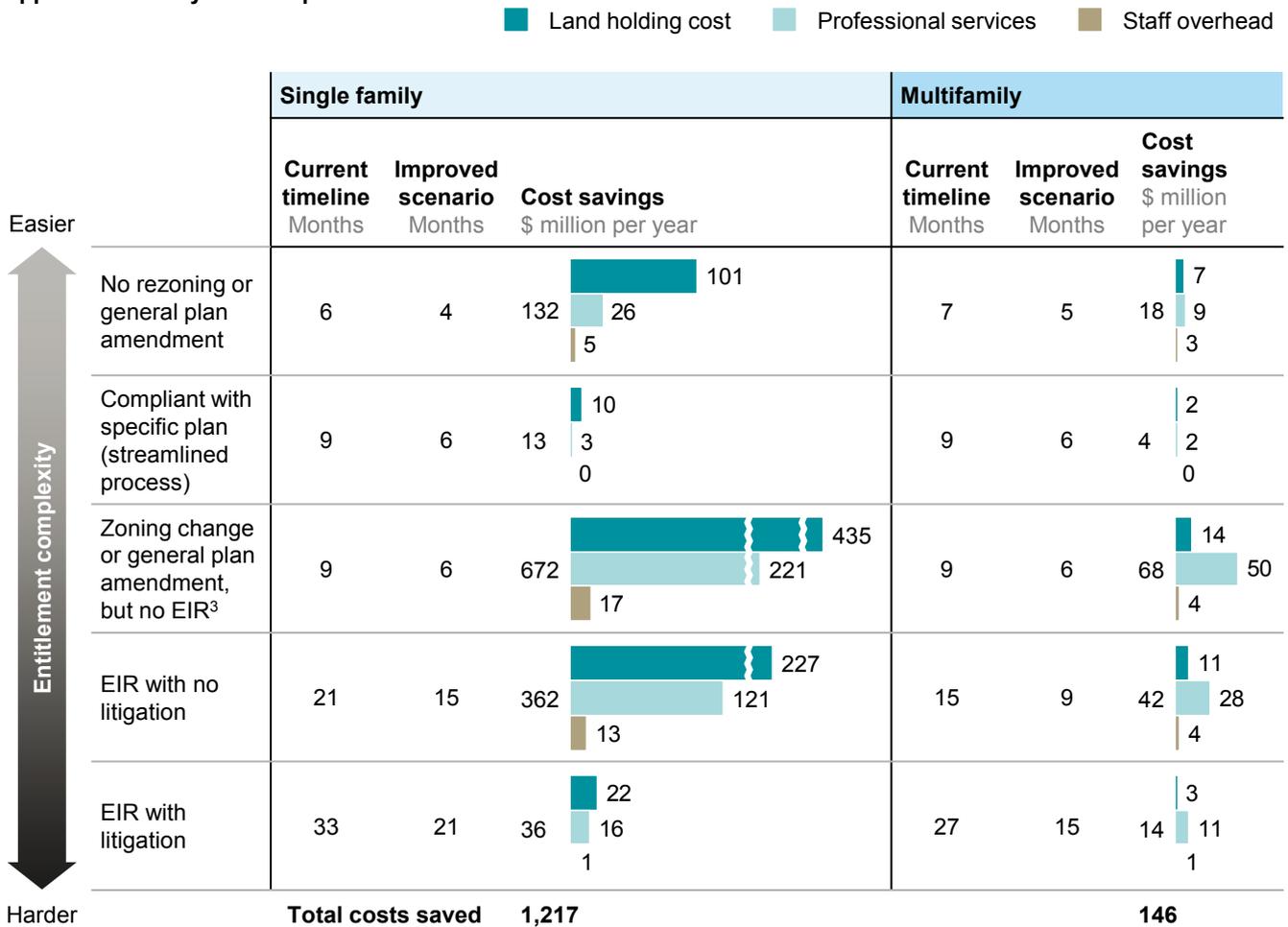
Downsizing in city planning departments during the 2008 recession has exacerbated the problem. Entitlement timelines have lengthened as fiscally challenged cities that laid off planning staff have not regained their former institutional knowledge or staffing capacity.

Our analysis suggests that shortening the entitlement process could save \$1.4 billion in costs per year, or \$12.6 billion by 2025 (Exhibit 20). About 90 percent of the savings would accrue from single-family projects, which have longer entitlement timelines than multifamily

projects and comprise a greater proportion of the residential market. Reductions in the cost of holding land drive 60 percent of the total cost savings.

Exhibit 20

Shortening the land-use approval process for housing could save Californians \$1.4 billion a year, and reduce approval times by 20 to 30 percent



1 Environmental impact report.

NOTE: Data labels <1 not shown. Numbers may not sum due to rounding.

SOURCE: Expert interviews; *Raising the roof: California housing development projections and constraints, 1997–2020*, California Department of Housing and Community Development, 2000; McKinsey Global Institute analysis

We find that there are seven ways to accelerate land-use approvals in California:

- Challenge mindsets through transparency:** Californians have become accustomed to a world in which land-use approvals can take multiple years. Public and private stakeholders may not fully appreciate the extent to which California’s system differs from US and global norms. California stakeholders could study other systems to get a fact-based view of “what good looks like”—for example, a robust, participatory, and transparent land-use process where outcomes are measured in days or weeks, rather than years or decades.
- Streamline CEQA for projects that meet critical housing needs:** The state could create a streamlined land-use approval process for certain project types, such as multifamily housing in specific locations that contains an affordable component. Easing CEQA requirements has accelerated other types of socially desirable development in California, such as school construction.

- **Turn local land-use debates into problem-solving discussions:** Local land-use debates tend to be dominated by project opponents. However, new types of community groups are advocating for housing needs and solutions. For example, SF BARF (Bay Area Renters’ Federation) was founded by apartment renters to reduce rental prices by increasing supply. BARF is part of the emerging “YIMBY” movement (Yes in My Back Yard). The San Francisco Housing Action Coalition takes a different approach, developing independent criteria for housing proposals. Volunteer architects, urban planners, and other professionals evaluate building projects against published criteria and collaborate with developers to improve design specifications and maximize housing production. The coalition’s stamp of approval carries weight in local land-use decisions.
- **Use technology and improve processes to generate better, faster public input:** Visualization solutions company Owlzid, for instance, enables neighborhood residents to visualize proposed developments at their actual locations through a 3D virtual viewing device, and then comment electronically. In Canada, the city of Vancouver has streamlined the public comment process to more effectively solicit, synthesize, and act on public concerns.
- **Make certain project types ministerial under local law:** Cities could revise general plans, update zoning codes, and create specific plans with enough specificity and community buy-in to enable “over-the-counter” land-use approvals for certain projects.
- **Expand city planning departments:** Jurisdictions could add staff on a permanent or per-project basis, funded by developers active in the jurisdiction.
- **Grandfather projects:** Jurisdictions could grandfather projects under the zoning requirements that applied at the date of application, thereby reducing developers’ uncertainty.

FIVE TOOLS TO CUT THE COST AND RISK OF PRODUCING HOUSING

While statewide regulatory change could jumpstart housing production in California (see Tools 6 and 7), there is also a significant opportunity to accelerate the delivery of that housing at the local level. We have identified five ways to achieve this by cutting the cost and risk of producing housing. These are:

- Raise construction productivity
- Deploy modular construction
- Accelerate construction permitting
- Reduce housing operating costs
- Align development impact fees with housing objectives

Tool 8: Raise construction productivity

The construction sector has failed to match the innovation that has spurred productivity gains in so many other industries in recent decades. Productivity in the US construction sector has not merely stagnated, but has, in fact, declined by 1.3 percent over the past 40 years.²⁵ In California, construction productivity fell by 7 percent between 2007 and 2012, suggesting that there is a substantial opportunity to boost the productivity of residential construction in the state. Since labor accounts for roughly half of all construction costs, improving productivity is an important means to reduce construction costs without paring

²⁵ Productivity is defined as the amount of output in relation to the level of input required. Companies raise productivity by increasing their output (more goods or services) and/or reducing their input (less capital, labor, or materials).

hourly wages. According to experts in lean construction, 40 percent of cost is typically wasted due to inefficient use of labor and materials.

We calculate that improving the productivity of housing construction in California by 10 to 20 percent would save \$6 billion to \$11 billion a year across the state, or \$54 billion to \$99 billion by 2025. The majority of savings would be in single-family construction, the largest category of projects.

Our analysis suggests six ways to raise construction productivity in California:

- **Optimize costs during pre-construction:** Leverage design-to-value techniques used in other industries (such as electronics and consumer packaged goods) to eliminate overspecification, standardize specifications and materials, and consolidate purchasing of materials and trade services.
- **Reduce cost and waste during construction:** Reduce cost, waste, and delivery time on-site through lean construction techniques such as worksite kaizen and incentive payments to subcontractors.
- **Continuously monitor and improve productivity during construction:** Create detailed plans and schedules using building information modeling, and track key performance indicators with real-time dashboards and regular performance dialogues.
- **Update contractors' licensing education:** Disseminate these techniques in the industry by incorporating lean construction principles into contractor licensing examinations.
- **Increase the number of skilled construction tradespeople in California:** Boost enrollment in trade schools to combat California's recent 25 percent drop in construction trade certifications completed. Consider accelerated immigration status for individuals with demonstrated skills.
- **Optimize product mix to achieve economies of scale:** In California, "spec" housing built on a large scale is nearly five times as productive as custom-built homes. To maximize productivity, the state needs some master-planned, greenfield developments in accordance with smart-growth principles (see Tool 5), in addition to smaller-scale infill projects.

Tool 9: Deploy modular construction

Construction costs have been rising in California, driven largely by relatively high wages. Builders have cited the shrinking force of skilled construction workers, high demand for labor and subcontractors due to the current market upswing, and the state's prevailing wage requirement for projects that receive public funds. Another driver of high building costs is construction delays. Delays increase loan costs, expose builders to escalating labor costs, and, most important, can cause developers to miss the market cycle. For a market-rate developer, that could mean selling units at a discount and losing money on a project.

Modular building and prefabrication technology can reduce construction costs and time. Modules are manufactured at an off-site factory, shipped to the construction site, and assembled to form a building. For instance, Marea Alta in the Bay Area city of San Leandro is a 115-unit affordable modular project developed by BRIDGE Housing. BRIDGE estimates that modular construction reduced the project's building costs by 10 to 15 percent and development time by 25 percent. While there have been a few successful modular projects in California, the technology has not been widely adopted due to first-mover problems (that is, market participants typically prefer that someone else takes on the risk of adopting a new technology), uncertainty over supply and servicing (module suppliers are few, and

some have gone out of business), and perceptions that prefab construction is inflexible or aesthetically unattractive.

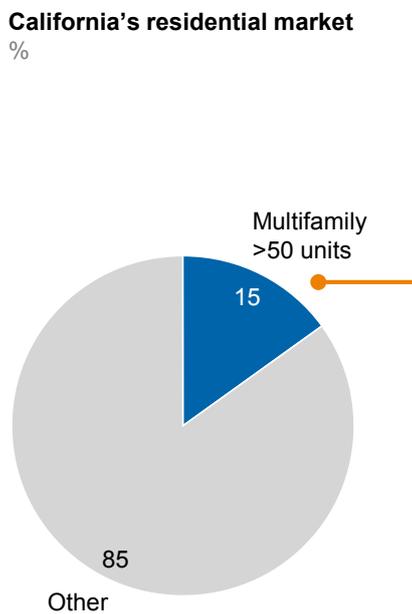
Our analysis suggests that the potential impact of adopting prefabricated or modular construction in California is \$200 million to \$1 billion per year, or \$1.8 billion to \$9 billion by 2025, depending on market uptake. Because modular construction is typically most attractive for large projects that can realize scale efficiencies by stacking modules, we assume that the applicable market is multifamily projects with more than 50 units. Within this segment, we estimate likely uptake at 10 percent. However, we have included an optimistic projection that assumes uptake of 50 percent to demonstrate the full potential of this nascent technique (Exhibit 21).

Exhibit 21

California could save \$200 million to \$1 billion per year by using prefabricated or modular construction

Cost savings for modular construction of multifamily projects with more than 50 units¹

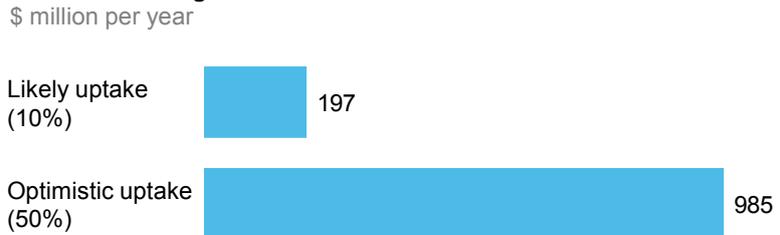
California's residential market %



Savings impact



Total cost savings



¹ Based on 350,000 units built in California, 15 percent multifamily projects >50 units, and benchmark construction costs in a standard 970-square-foot (90-square-meter) unit.

SOURCE: McKinsey Global Institute analysis

There are four ways to accelerate adoption of modular construction in California:

- **Educate developers about benefits:** Provide localized case studies of modular construction projects that saved time and money, raised quality standards, or improved on-site safety.
- **Ease financing and permitting barriers:** Banks and city building departments may lack familiarity with modular building techniques. Adapting construction loan

products and building codes to accommodate modular construction could accelerate developers' uptake.

- **Lift barriers to adoption for affordable developers:** In California, construction projects that receive public funds are bound by law to pay a prevailing construction wage. This is a challenge for developers seeking to adopt modular techniques, given that much of the work is performed off-site. Stakeholders could develop a certification system to ensure that modular construction meets California's prevailing wage requirement.
- **Provide incentives or tax holidays for early adopters:** To jumpstart the modular industry and build a supplier base, the state could provide financial incentives to developers.

Tool 10: Accelerate construction permitting

Unlike California's discretionary land-use approval process, construction permitting is largely ministerial, but each local jurisdiction has unique ordinances, methods, and timelines. Permitting can be a complex and lengthy process, taking up to nine months in Los Angeles and San Francisco. Long waits for permits may be tied to limited capacity in public agencies, which downsized during the most recent recession and have not expanded to keep pace with recent growth in the real estate industry.

During the construction process, approvals must be obtained from multiple agencies. These include the local building department, fire department, and department of public works. Coordinating among agencies often adds a substantial time burden, especially when the builder needs to be in touch with each agency to track the progress of a permit. However, there is an opportunity to streamline the permitting process, and some cities have tried to condense the timeline. Fresno, for instance, launched the Business Friendly Fresno initiative, which includes a plan to simplify permitting and grant approvals within a defined period.

We find that shortening the time needed to obtain building permits could potentially save \$180 million per year, or \$1.6 billion by 2025, and shave more than one month from the average project completion timeline. An estimated 10 percent of projects in California require complex permitting, and these projects would generate 40 percent of the savings due to their long timelines. The primary financial effect of quicker permitting is lower land holding costs, which account for more than 85 percent of the savings (Exhibit 22).

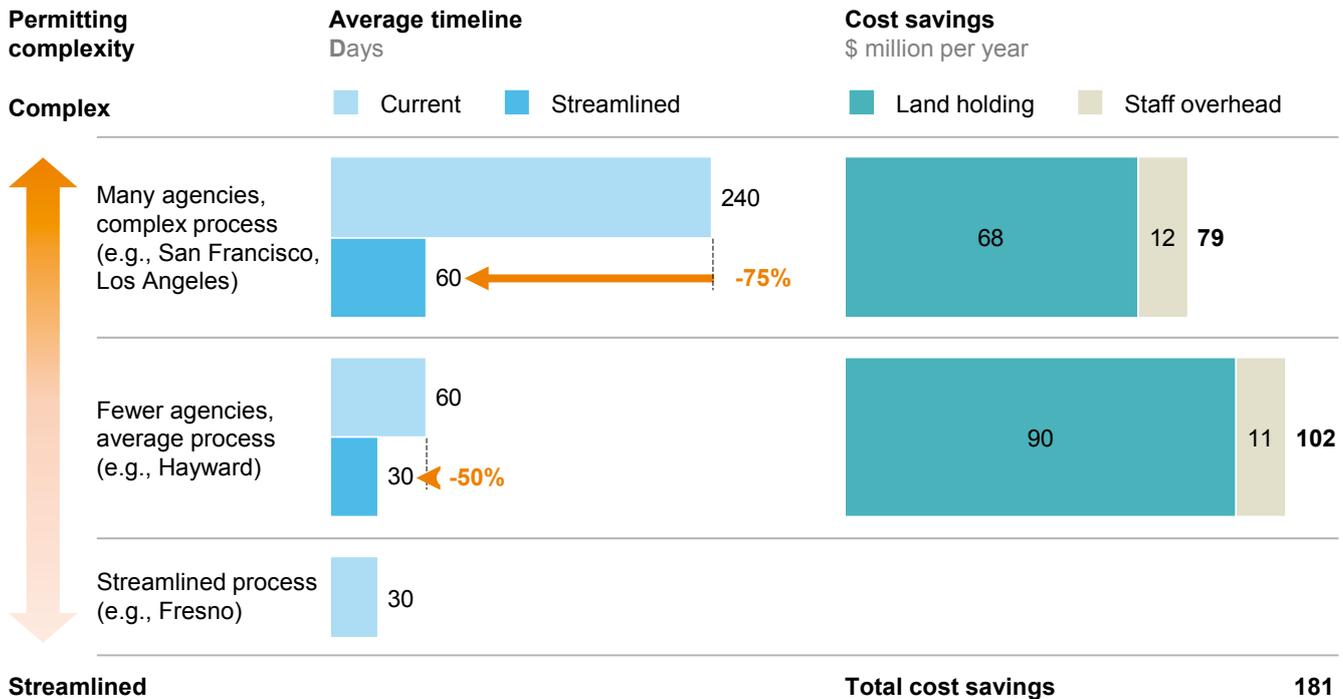
We have identified five ways to accelerate construction permitting in California:

- **Simplify and standardize building codes:** To encourage faster approvals, 29 jurisdictions in the Silicon Valley area have adopted uniform building codes. Other cities have cut out steps for permitting certain project types, such as buildings smaller than 50 units in Los Angeles. More jurisdictions should follow suit.
- **Assess performance in public agencies to resolve bottlenecks:** Performance should be assessed to identify and resolve the root cause of delays, such as understaffing in city building departments. This approach helped Boston's Inspectional Services Department upgrade performance to a point where 75 percent of basic permits were processed within 20 days.
- **Run permitting steps in parallel:** Simultaneously processing various permitting elements, such as building, fire, and health and sanitation permits, would reduce the effect of bottlenecks, which can halt the permitting process when permitting operations are sequential.

- **Centralize:** One central agency should be designated to hold decision-making authority for permits and to coordinate with other agencies. The heightened transparency and accountability that would result would reduce the likelihood of delay.
- **Automate:** Digitizing permitting processes would reduce errors and delays caused by data entry, document transfers, and paper file searches.

Exhibit 22

Accelerating building permits could save \$180 million a year



NOTE: Numbers may not sum due to rounding.

SOURCE: McKinsey Global Institute analysis

Tool 11: Reduce housing operating costs

Operations and property maintenance are key expenses for multifamily housing operators, costing them between \$4,500 and \$6,500 annually per unit. The variation in expense stems from the age and size of the property, the type of landscaping, and whether households are submetered for water, among other factors.²⁶

A unique challenge faced by affordable housing operators is the fact that their rental income is below the market rate, but their expenses (including wages and utilities) are mostly incurred at market prices. In addition, they often bear higher legal and compliance costs than market-rate operators. Compliance obligations for properties with many funding sources are demanding and time-consuming, often involving multiple physical and administrative inspections.

We find that improving operational efficiency could reduce the operating cost of housing by roughly \$600 per unit per year. This is equivalent to \$60 million to \$180 million in savings annually across California’s multifamily properties, or \$1.6 billion through 2025.

²⁶ A survey by the Local Initiatives Support Corporation shows that operating costs are 7 to 13 percent higher per unit for properties with between 16 and 49 units than for properties with 100 or more units. See Christopher Lee, *2015 NAA survey of operating income & expenses in rental apartment communities*, National Apartment Association, August 2015.

We have identified three ways to improve operational efficiency for housing in California:

- **Reduce utility, water, and waste expenses:** While some affordable housing developers are on the cutting edge of green building management, more could be done. Approaches range from low-cost solutions such as better monitoring of energy and water consumption to capital improvements such as rooftop solar power generation, water-efficient plumbing fixtures, and gray water systems.
- **Reduce procurement costs:** Due to high purchasing volume, large market-rate housing operators typically obtain discounts on services such as insurance, landscaping, and painting. Affordable housing operators typically lack similar purchasing volume. New collaborative purchasing organizations such as HPN Select enable affordable housing operators to pool their purchasing volume to negotiate discounted prices. Pooled procurement could reduce costs by up to 20 percent in certain procurement categories.
- **Optimize staff productivity:** Salaries and personnel make up nearly 25 percent of operating and management costs. Productivity could be improved by screening employees more effectively during the hiring process and through targeted employee training.

Tool 12: Align development impact fees with housing objectives

For California, local jurisdictions levy fees on developers when developers build new housing units. These fees are intended to offset the costs of public infrastructure and services that accompany new development. For example, if a new neighborhood is built, more families will live in the area, increasing the need for classrooms and teachers in local public schools. Impact fees are usually codified as local ordinances and itemized per the service or infrastructure funded, such as a parks fee, a schools fee, and a sanitation fee. Outside California, municipalities tend to fund local infrastructure through property tax revenue. In California, Proposition 13 and AB 8 limit municipal property tax revenue, so municipalities use impact fees on new development as a primary funding source for local infrastructure.

California has the highest impact fees in the United States by a wide margin. In fact, California's impact fees are more than three times higher than average fees in other states.²⁷ In 2012, development impact fees in California averaged \$31,000 for a \$200,000 single-family home, or \$22,200 excluding utility interconnection fees. In other US states, the average impact fees for a home of this size would total \$8,500, or \$5,800 excluding utility interconnections.

California's high impact fees can contribute 15 percent to the cost of a new home—though exact figures depend on jurisdiction and home value. Impact fees tend to exert the strongest effects on lower-income homebuyers and low-cost markets, since a \$5,000 or \$10,000 fee may represent a meaningful portion of an affordable purchase price.

For larger residential projects, some California municipalities ask developers for additional concessions—beyond the published schedule of local impact fees—in exchange for land-use approvals. Cities and community groups typically view these payments as “community benefit agreements,” or a form of real estate value capture. Developers often view these payments as “exactions” demanded by municipalities in exchange for project approvals. For example, a city may ask a developer to sign a community benefit agreement that stipulates payments to fund a local sports complex, public art, or other community goods that are not legally required. Because these exactions are rarely publicized, our estimates are likely conservative.

²⁷ For a multiyear survey of development impact fees in 281 U.S. jurisdictions, see Clancy Mullen, *National impact fee survey: 2012*, Duncan Associates, August 2012.

Reducing California's development impact fees to match the US national average, while zeroing out exactions, would offset more than \$10 billion in development costs a year. A portion of this would be true savings, achieved by reining in fees that overestimate the costs of infrastructure and public services. Another portion of the \$10 billion would be cost reallocation—that is, distributing school construction and other infrastructure costs more broadly across society, rather than through a tax on new construction. Reducing or reallocating \$10 billion in impact fees would incentivize developers to expand supply and lower building costs, which could be passed on as savings to renters and homebuyers.

We find three ways to align development impact fees with housing objectives:

- **Determine the true cost of providing infrastructure:** Currently, one city may charge developers \$15 per square foot as a school impact fee, while the next city might charge \$5 per square foot. The true cost of school construction may be identical, but the charges vary widely because each city determines its own fee. A consistent approach would define the cost against a benchmarked level of service and align fees to it. A state or regional review board could ensure the reasonableness of the fees.
- **Defer or waive fees for qualified projects:** Local governments could waive impact fees for projects that meet a predefined social benefit threshold, such as supportive housing projects for formerly homeless people. Governments could also defer fee collections until a project's certificate of occupancy has been issued. This incentivizes development by improving firms' cash flow, with low cost and risk for the city. Since the late 1990s, Sacramento County has offered a menu of fee deferral and fee waiver options for various types of projects.
- **Spread infrastructure fees across a wider base:** Rather than financing infrastructure through one-off charges on development, which are borne by new homebuyers, cities could impose smaller, recurring charges on a wider base of payers. The full pool of homeowners could fund infrastructure through recurring property tax payments, though this could require changes to Proposition 13 and AB 8. Alternatively, fees could be distributed among a broad base of users—for example, utility billing assessments, vehicle license fees, parking permits, road tolls, or sales taxes. Orange County, for example, has built a network of toll roads that serve 250,000 drivers each day as a low-congestion alternative to public highways, and construction was financed through toll revenue rather than property tax.

THREE TOOLS TO ENSURE ACCESS TO HOUSING

The tools that we have discussed—including identifying housing hot spots, unlocking supply by shifting incentives, and cutting the cost and risk of producing housing—could unlock millions of new market-rate housing units in California. This would expand housing supply and reduce housing costs for millions of Californians, but this will not solve the problem for California's most vulnerable residents. Low-income, special needs, and homeless individuals will require support to access housing.

We have identified three tools to help California ensure access to housing:

- Prioritize state and local funding for affordable housing
- Attract new investors in affordable housing
- Design regulations to boost affordable housing while maintaining investment attractiveness

Tool 13: Prioritize state and local funding for affordable housing

Public funding and financing for affordable housing in California has declined since 2011, when the state eliminated all of its local redevelopment agencies amid severe budget shortfalls. New public funding and financing tools for affordable housing have emerged in recent years, including cap-and-trade funds for housing projects that demonstrate greenhouse gas reductions, and bond measures to finance homes for veterans who live on the streets (Proposition 41). Despite these measures, public investment in housing has not returned to pre-2011 levels.

California receives \$220 million annually in Low-Income Housing Tax Credit (LIHTC) funds through a federal allocation. The California Tax Credit Allocation Committee administers this program and grants tax credits to developers that successfully submit applications for affordable housing projects. In 2015, California's LIHTC program supported the creation of 18,000 deed-restricted affordable housing units.

Our analysis suggests that there are five ways that taxpayers and their representatives could channel more public dollars into affordable housing. Taken together, these five sources of funds could generate more than 20,000 affordable housing units per year above the current baseline. While this is a small fraction of the total housing supply required in California, these would be dedicated affordable units, specifically benefiting low-income households. The five potential sources are as follows:

- **Allocate state general funds to match historical budget commitments:** The state could set aside a portion of its general revenue each year to support affordable housing, such as the \$400 million discussed during the 2016 budget cycle, which would be consistent with historical general revenue commitments. Funding at this level could create more than 5,000 affordable units per year.
- **Issue state general obligation bonds:** The state could issue a general obligation bond to be paid off from general funds over a multiyear horizon, as it did with Proposition 1C in 2006 for \$2.9 billion. Between 1990 and 2015, California issued a general obligation housing bond approximately every nine years. If the state issued a \$3 billion housing bond on that schedule, roughly 4,000 affordable units could be added each year.
- **Issue county general obligation bonds:** Counties could issue general obligation bonds against property tax revenue, as San Francisco did in 2015 with Proposition A, a \$310 million bond issued against a property tax assessment of \$4.33 for every \$100,000 in assessed value. Santa Clara and Alameda counties have general obligation bonds on the November 2016 ballot for \$950 million and \$580 million, respectively. If half of California's 18 urban counties each passed a \$500 million affordable housing bond every ten years, more than 5,000 affordable housing units could be created each year.
- **Establish new permanent funding sources:** The state or municipalities could create new use- or transaction-based fees to fund affordable housing, such as a \$75 document recording fee for real estate transactions.²⁸ Such a fee could create more than 5,000 units of affordable housing per year.
- **Expand or revise tax credits:** The state could allocate additional funds to its tax credit program, incentivizing uptake of the undersubscribed 4 percent federal LIHTC program. In addition, some argue that the state could identify ways to reduce the per unit cost of LIHTC projects, although this could trigger trade-offs in housing quality.

²⁸ As proposed in the 2013 California Homes and Jobs Act (SB 391).

Tool 14: Attract new investors in affordable housing

Investing in affordable housing in California could be an attractive opportunity for social impact investors, employers seeking to strengthen the communities in which they operate, and US and global financial investors seeking low-risk, low-return, dollar-denominated real asset investments in one of the world's most dynamic economies. In Contra Costa County, for example, the Richmond Community Foundation has earned 2 percent returns for its bond investors through its low-income homeownership program, which develops affordable for-sale housing without public subsidy.²⁹

California's employers provide little financial support for affordable housing, but this is beginning to change as California's high housing costs affect employee health and productivity, make it harder to attract and retain talent, and hinder business competitiveness. If Fortune 500 companies headquartered in California committed 0.1 percent of their excess cash and short- and long-term investments to housing creation, this would amount to nearly \$1 billion per year in housing equity.

We estimate that attracting new sources of capital could finance more than 30,000 affordable units in California per year. We believe that there are four key ways to attract new investors in affordable housing:

- **Tap capital markets:** Housing Trust Silicon Valley was the first non-profit community development financial institution in the United States to receive a Standard & Poor's credit rating, enabling it to potentially raise capital from a broad set of institutional investors—particularly public companies that are limited to investing in organizations that carry a credit rating. The Housing Trust was rated AA-, which is an investment-grade rating indicating that it has a “very strong capacity to meet its financial commitments.”
- **Attract philanthropic investment by linking housing to health, poverty reduction, and other social goals:** Because health and education outcomes are difficult to strengthen when families lack secure housing, one way to attract housing investment is to position housing as a foundation for individual and societal well-being. For example, the Kresge Foundation committed \$70 million to launch the Strong Families Fund to finance affordable housing and social services coordination. If 5 percent of the philanthropic funds distributed in California were allocated to affordable housing, an additional \$1.2 billion in equity per year would be available.
- **Incentivize banks by passing responsible banking ordinances:** San Diego and other cities have enacted leveraged banking ordinances, in which a city agrees to deposit a portion of its general funds with banks that maintain strong Community Reinvestment Act ratings. This incentivizes banks to invest effectively in affordable housing in fulfillment of their federal Community Reinvestment Act requirements.
- **Catalyze employers to invest and advocate:** Major employers could contribute money, land, and political capital to create housing in their communities. High housing prices have become a critical business issue in California, directly affecting employers' ability to attract and retain employees, as well as employees' health, financial well-being, and on-the-job productivity. There are a number of examples of California employers that are actively engaged on housing:
 - Orange County Business Council, which includes Orange County's biggest employers, developed a Workforce Housing Scorecard that ranks the county's

²⁹ The Richmond Community Foundation's business model is to buy blighted or foreclosed single-family homes at a discount, rehab the homes using labor from a jobs training program and materials purchased at a discount, and then sell the homes to low-income homebuyers who have graduated from a personal finance training program and are pre-qualified for a low-cost mortgage.

cities on such metrics as job growth, housing creation, jobs-to-housing ratio, and housing density.

- Google (Alphabet) led efforts to transform a tech-oriented office district in Mountain View into a mixed-use neighborhood with 10,000 homes. It also established an \$86 million low-income housing fund through US Bancorp Community Development Corporation.
- Los Angeles Unified School District transferred three parking lots to affordable housing developers to construct 185 housing units.
- Stanford University provides down payment assistance and issues mortgages to employees who purchase homes in a qualifying area.

Tool 15: Design regulations to boost affordable housing while maintaining investment attractiveness

Around the world, cities have developed policy tools such as inclusionary zoning, linkage fees, and tax increment financing in order to capture a portion of the value that is created through market-driven real estate development and channel it into subsidized affordable housing. This can be an effective way to boost the production of affordable housing, but regulations must be designed with developers' risks and financial returns in mind to ensure that affordable housing policies do not stifle new market-driven supply.

Cities unlock economic value when they allow a housing project to proceed or rezone an area to increase density. These public actions create value for the developer who builds the housing, the residents who buy or rent it, and ultimately the city itself, whose economic activity and property tax revenue expand. To ensure that some of this growth benefits members of society who cannot afford market-rate housing—which also creates social and financial value—California's cities have three ways to boost affordable housing production through market-driven development:

- **Linkage fees:** Linkage fees assess a levy per square foot on office, retail, industrial, and residential construction, with the proceeds accruing to a city's affordable housing authority. San Diego and other cities in California have employed linkage fees, setting rates between \$1 and \$2 per square foot depending on the type of development.³⁰ Los Angeles is developing a linkage fee ordinance. Linkage fees are effectively a tax on new development, funded by developers and passed on to renters and buyers. As such, cities must determine an optimal fee level, balancing their market-rate construction goals with affordable housing objectives.
- **Inclusionary requirements:** Some cities and municipalities impose inclusionary requirements to ensure that market-rate residential development includes an affordable component. They could take several forms, including on-site requirements, off-site requirements, in-lieu fees, and land dedications. As such, inclusionary requirements operate as a tax on developers, payable in built units, money, or land.
 - On-site requirements mandate that developers build a certain number of affordable units on-site for every market-rate unit. For instance, San Jose's inclusionary housing ordinance requires developers who elect to satisfy their affordable housing obligation this way to reserve 15 percent of units for that purpose.³¹

³⁰ Jonathan Horn, "Linkage fee hike approved by council," *San Diego Union-Tribune*, October 6, 2014.

³¹ "Attachment A-1: Inclusionary housing ordinance compliance options procedure for build on-site option," City of San Jose (www.sanjoseca.gov/DocumentCenter/View/57911).

- Off-site requirements obligate the developer to build or procure a specific number of units off-site. In San Francisco, a developer choosing to fulfill its inclusionary requirement through off-site development must create one off-site affordable unit for every five market-rate units in a project. Carlsbad, a city outside San Diego, has developed an innovative off-site program that divides the city into quadrants and allows developers to “credit” affordable units in the quadrant toward their inclusionary requirement for market-rate projects in that quadrant.
- In-lieu fees allow the developer to pay into a city fund earmarked for affordable housing rather than create affordable housing on- or off-site. These fees vary by type of unit and location, as well as the formulas municipalities use to calculate them. They can be as low as \$7,500 in places such as the San Joaquin Valley and as high as \$521,000 in urban areas like San Francisco.³²
- Land dedications give the developer the option to donate a portion of a building site to an affordable housing developer, which could then build housing with zero land acquisition costs.
- **Tax increment financing:** The economic growth generated by infrastructure and real estate development naturally increases the tax revenue of a neighborhood or city. California’s 2015 Enhanced Infrastructure Financing District (EIFD) law gave cities and local agencies new authority to set aside a portion of future tax revenue within a district for a specific purpose, such as affordable housing. Alternatively, the EIFD could be structured to borrow against these anticipated cash flows by issuing municipal bonds to finance infrastructure or affordable housing. With this strategy, cities could finance housing up-front rather than wait until enough tax revenue accrues. San Diego, Truckee, and La Verne have used EIFDs or are exploring their use.

Tax increment financing is powerful because it does not operate as an up-front tax on developers, which could impede housing supply in a state that sorely needs housing. Instead, tax increment financing could be structured to allow communities to fund affordable housing up-front, and then gradually repay this investment by capturing a portion of the value created through private real estate investment.

3. HOW TO CLOSE THE GAP: A COMMUNITY-BASED APPROACH FOR ACTION

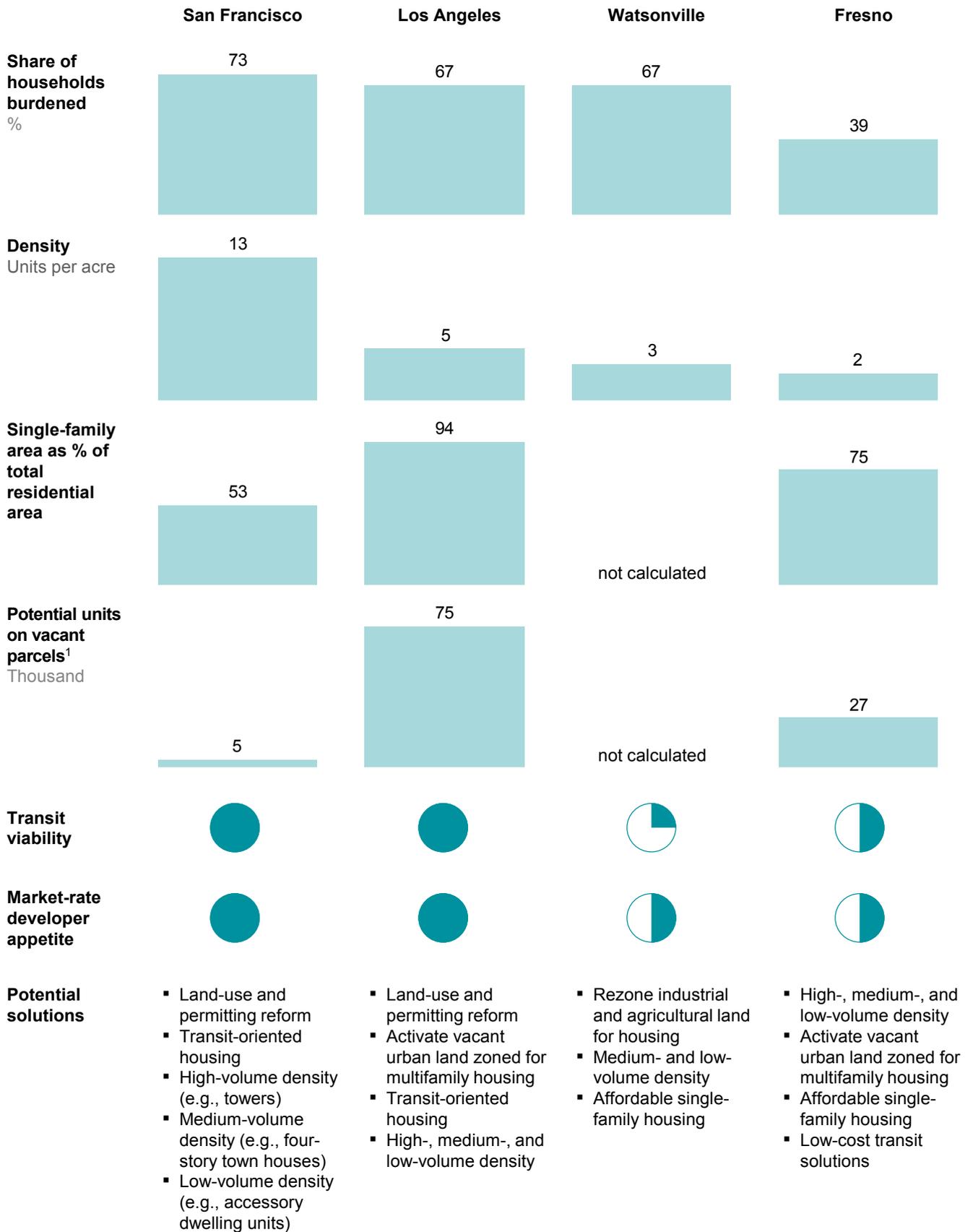
No single tool can close California’s housing gap. Some of the tools we have identified require action at the state level, one example being reforming the incentives for local government to approve housing. But most must be developed and employed at the local level. Moreover, the answer for each city depends on the nature of the problem it faces, market demands unique to its area, and local preferences (Exhibit 23). Every community can unlock housing supply but in very different ways given local geographic constraints, living preferences, land prices, and access to transit.

³² Mayor’s Office of Housing and Community Development, City and County of San Francisco.

Exhibit 23

There is no one-size-fits-all answer to housing—cities need different solutions

○ Low ● High



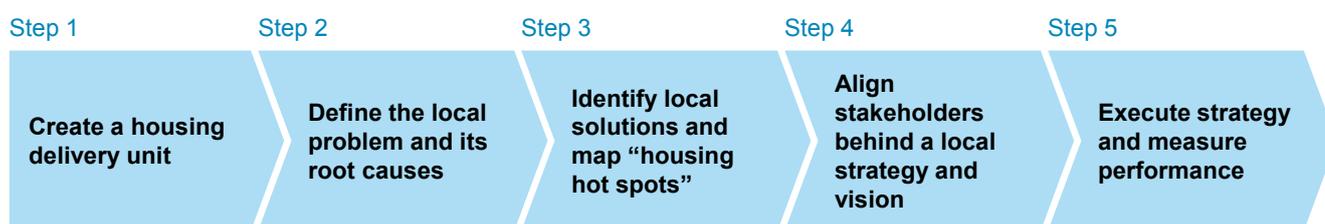
1 Conservative—includes potential units only on vacant parcels already zoned for multifamily development.

SOURCE: US Census Bureau; McKinsey Global Institute analysis

California's communities could take five steps to create appropriate and effective housing strategies, mirroring the methodology we have applied at the state level (Exhibit 24).

Exhibit 24

California cities can follow a five-step process to close the local housing gap



SOURCE: McKinsey Global Institute analysis

The first step is creating a housing delivery unit—also known as a “delivery lab”—to identify the root causes of the local housing challenge, create a vision for the future, choose appropriate strategies to deliver the vision, and execute on those strategies. Public delivery units should be given a mandate for action, with clear performance metrics, and should be structured to cut through departmental silos to achieve results. Delivery units in California could draw inspiration from the San Diego Housing Commission, a public agency that has made meaningful progress in closing the city’s housing gap. The commission has hired private-sector talent, built an in-house real estate development team, invested in marketing and communications, and used municipal bonding authority to raise funds in the capital markets.

Second, the delivery unit needs to rigorously assess the situation faced—and its root causes—to define the problem in the local context. This includes analyzing demographic, economic, financial, construction, and other data to reveal the supply and demand dynamics of the market. The housing gap itself should be quantified in dollar terms and by the number of households affected. The results of these analyses should identify which groups of people are in greatest need (examples might include low-income senior citizens, college-educated professionals with young children, or homeless individuals) and how their living conditions are affected by the housing shortage.

The third step is for the delivery unit to define solutions based on the characteristics of the local housing market. For instance, San Francisco and Watsonville have similar affordability gaps in numerical terms—73 percent and 67 percent of households in the two cities cannot afford the local cost of housing, respectively. However, the root causes, and therefore the solutions, are different for these two cities.

- In San Francisco, market-rate developers have ample motivation to build, but face difficulties in getting developments approved due to local politics and local land-use rules. Reform of land-use and permitting processes is key to unlocking supply in San Francisco. In addition, because land in San Francisco is scarce and expensive, the city’s housing problems cannot be solved entirely within the city itself. San Francisco is a highly viable transit hub, and the city needs transit-oriented housing in surrounding cities aligned to BART, Caltrain, cross-bay ferry service, and California High Speed Rail.
- The situation is quite different in Watsonville, a rural city surrounded by farmland, where housing demand has outpaced supply. The city is packed with single-family houses and two-story apartment buildings. To augment supply and ease costs, Watsonville could rezone industrial and agricultural land for housing and promote mid-rise development,

accessory dwelling units in existing homes, and affordable, adjacent single-family housing construction.

As part of identifying local strategies, communities should map their housing hot spots. Through geographic information system mapping, communities can identify priority parcels such as vacant urban land, underutilized land zoned for multifamily development, publicly owned land, and transit hubs with capacity to increase residential density. To spur development, these parcels could be targeted with specific plans, program-level environmental impact assessments, and location-specific tax incentives. In addition, local policy makers could identify regulatory and financial solutions to close the housing gap, such as speeding up land-use approvals, creating an affordable housing density bonus program, or cutting fees and waiting times for homeowners who build accessory dwelling units. For each potential strategy, the potential effect (for example, housing produced, time or cost savings) needs to be quantified. Communities also need to identify the risks and barriers to implementation, as well as ways to clear those hurdles.

The fourth step is to align stakeholders behind a strategy and vision that is authentic to local needs. Diverse stakeholders need to come together in support of a shared purpose. Communities need to determine exactly what problem the strategy is designed to overcome and balance goals that may be in conflict—for instance, maximizing total housing production versus maximizing affordable units. It could be helpful to share examples of success to inform stakeholders. In the case of Fresno, for example, the city reinvented its general plan and zoning code, which were written in the 1950s, to encourage high-density and mixed-use growth and to reduce timelines and risk for developers (Exhibit 25).

Exhibit 25

Fresno reinvented its zoning code to enable smarter growth

Downtown zoning		
	Old code	New code
Height	<ul style="list-style-type: none"> Maximum 6 stories/75 feet (taller with conditional use permit) 	<ul style="list-style-type: none"> Downtown core: 15 stories/190 feet Downtown general: 10 stories/140 feet Downtown neighborhood: 6 stories/90 feet
Units/acre	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> No unit or floor area ratio cap
Parking	<ul style="list-style-type: none"> 2 square feet of parking per 1 square foot of building area 	<ul style="list-style-type: none"> 0 stalls for commercial 0.5 stalls per unit for residential Can be further reduced via special programs, e.g., unbundled parking
Permitted uses	<ul style="list-style-type: none"> Residential not allowed, mixed use in a single building allowed only via conditional use permit 	<ul style="list-style-type: none"> Generally, all uses permitted except for heavy industrial; light industrial/artisanal uses permitted in historically industrial section
Ground floor look and feel	<ul style="list-style-type: none"> 10-foot landscaping setback 	<ul style="list-style-type: none"> No landscaping setback 12-foot sidewalk to encourage walking Doors every 50 feet 60% glass facade

SOURCE: Expert interviews; McKinsey Global Institute analysis

The local strategy should be tied to a vision for a better city that connects housing to citizens’ broader goals. These goals might include vibrant neighborhoods, a dynamic and competitive economy, and socioeconomic diversity. At the same time, the city should identify the direct benefits of creating housing in terms of, for instance, the number of homeless individuals sheltered or construction jobs created.

Fifth, and finally, the delivery unit needs to define specific performance metrics, execute the strategy, and measure performance. Performance metrics should encompass the entire housing-development pipeline, including the number of units zoned, the number of units approved and permitted, total residential floor space created, the ratio of affordable units created to total units created, and the number of individuals living in unsafe housing or living without shelter.



California faces a major crisis in its housing provision: robust demand, inadequate supply, and rising prices that leave nearly half of the state's households struggling to afford to rent or buy a home. Yet there are many practical ways that communities in the state can increase housing supply and drive down costs. There *are* opportunities to build: this paper has identified more than five million new housing units that could be built on vacant land, near public transit stations, and even in people's backyards.

The challenge is to overcome current barriers—whether regulatory, political, economic, or cultural—to unlock supply and actually build these much-needed homes.

Individual communities have the power to act. Our hope is that the analysis contained in this paper will serve as a blueprint to help communities close the housing gap—and thereby improve social equality, quality of life, and economic competitiveness in the state of California.

APPENDIX

This appendix provides details on the key assumptions, calculations, and data sources employed in our research. It comprises the following three topics:

1. How we estimated California's housing affordability gap.
2. How we estimated lost economic output due to California's housing shortage.
3. How we estimated the potential impact of tools to close California's housing gap.

1. HOW WE ESTIMATED CALIFORNIA'S HOUSING AFFORDABILITY GAP

To arrive at an estimate of California's housing affordability gap, we first estimated local housing prices in each MSA by using median per square foot rental and purchase prices. We used price data from Zillow.com and averaged these data from January to April 2016. To control for variation in the size of housing, we assumed that every household requires a standard unit of 970 square feet, consistent with US housing standards. Multiplying these two data points, we obtained the cost of a standard housing unit in the local market. In the case of rentals, we assumed that a household's cost is monthly rent for a standard housing unit. We did not include utility costs or other housing-related payments. For house purchases, we calculated a household's monthly cost of owning a standard housing unit, which includes a mortgage payment on a 30-year schedule, as well as property tax and insurance. This estimate is conservative, as it does not account for the up-front cost of a down payment.

Next, we estimated what a household is able to afford, and the housing affordability gap under current market prices. We examined every housing market in California (at the MSA level), and within each, segmented households into 16 income levels. We then calculated 30 percent of every household's income. This represents what households should pay for housing, based on a widely accepted housing allowance of 30 percent. We then looked at how much each household would have to pay for a standard housing unit in the local market using the calculation we have described. The difference between the household's 30 percent housing allowance and the market cost represents its "affordability gap." For example, if a household earns \$40,000 per year and lives in a place where a standard rental unit costs \$15,000 per year, its housing allowance (at 30 percent of income) is \$12,000, and its affordability gap is \$3,000. Similarly, if the household earns \$60,000 per year, its housing allowance would be \$18,000, and its affordability gap in this situation would be zero. We performed this analysis for households in all 34 MSAs in California. Summing the affordability gaps across MSAs, we obtained the statewide affordability gap estimate. These 34 MSAs cover around 98 percent of California's population. There are insufficient data on the remaining 2 percent.

2. HOW WE ESTIMATED LOST ECONOMIC OUTPUT DUE TO CALIFORNIA'S HOUSING SHORTAGE

To estimate the economic output that California loses due to its housing shortage, we used the estimated total affordability gap of \$50 billion to \$60 billion per year (as calculated in the previous section). We assumed that 94 percent of this burden is borne by low-income households and 6 percent by middle-income households; that housing payments are collected by high-income households; and that high-income households have a lower marginal propensity to consume than low- or middle-income households. We assumed that consumption multipliers are 2.5 for low-income households, 1.7 for middle-income households, and 1.4 for high-income households.

We then calculated a “crowding-out” impact on consumption. We calculated that \$50 billion to \$60 billion in annual income going to high-income households leads to annual consumption of \$70 billion to \$84 billion. We arrived at these figures by multiplying the income by the multiplier. If the burdened households paid less for housing (that is, 30 percent of income), these savings would add to their permanent disposable income. Low-income households would obtain between \$47 billion and \$56 billion per year, and middle-income households would get \$3 billion to \$4 billion per year. We estimated that this additional income would lead to total consumption of \$118 billion to \$141 billion per year by low-income households (using 2.5 as the multiplier), and \$5 billion to \$6 billion per year by middle-income households (we get this by using the multiplier of 1.7).

The net impact on consumption is obtained by subtracting the forgone consumption by high-income households from the additional consumption by low- and middle-income households. This comes to between \$53 billion and \$63 billion per year.

We also calculated output lost by the construction sector because of building fewer houses than the market needs. We assumed that to achieve housing parity with peer states, California needs to build 250,000 to 400,000 units per year through 2025. Currently, only 100,000 units per year are being built, creating a gap of 150,000 to 300,000 units per year. We assumed that, on average, a housing unit in California leads to output of \$260,000. We used a construction sector output multiplier of 2.15; every \$1 of output in the construction sector produces output of \$2.15 in the economy. This translates into total output of \$560,000 per housing unit. We calculated the loss in output as the number of housing units not being built multiplied by the total output from building a housing unit. In this case, it translates to \$85 billion to \$165 billion a year.

3. HOW WE ESTIMATED THE POTENTIAL IMPACT OF TOOLS TO CLOSE CALIFORNIA'S HOUSING GAP

Our estimates of the potential impact of the 15 tools described in this paper are summarized in Exhibits A1–A14.³³

Exhibit A1

Tool 1: Build on vacant urban land that cities have already zoned for multifamily development

Parameter: Potential uplift in housing units	Assumption %
Los Angeles County	1.0–2.3 Calculated bottom-up through geographic information system (GIS) mapping; assumes vacant residential parcels will be built to maximum zoned density
San Francisco	1.2 Calculated bottom-up through GIS mapping; assumes vacant residential parcels will be built to maximum zoned density
Fresno	15 Calculated bottom-up through GIS mapping; assumes vacant residential parcels will be built to maximum zoned density
Other California cities with greater than 100,000 residents	1–3 A conservative range based on observed vacant land in Los Angeles, San Francisco, and Fresno; other cities are likely to have more vacant land than the major metros

Exhibit A2

Tool 2: Intensify housing around transit hubs

Parameter	Assumption					
Density (units per net acre)	Regional hub >15					
	Urban center 6.5–15					
	Suburban node <6.5					
Units to add	Low case One new housing unit per net acre for every 100 existing units within the transit-oriented development area					
	High case New housing units are developed to the density of the next urban type, i.e., suburban nodes are developed to the density of urban centers (10 units/net acre), and urban centers are developed to the density of regional hubs (31 units/net acre)					
Share of developable residential area needed for non-housing purposes such as roads (%)	10					
Transit systems considered in the analysis	<table border="0"> <tr> <td>Rail</td> <td> <ul style="list-style-type: none"> ▪ Caltrain ▪ Altamont Corridor Express (ACE) ▪ Coaster ▪ Metrolink ▪ Amtrak ▪ Heavy and light rail ▪ Bay Area Rapid Transit (BART) ▪ San Francisco Muni Metro </td> <td> <ul style="list-style-type: none"> ▪ Metro Rail in Los Angeles ▪ Sacramento Regional Transit light rail ▪ Sprinter ▪ San Diego Trolley ▪ Santa Clara VTA light rail ▪ 12 proposed California high-speed rail station </td> </tr> <tr> <td>Ferries and buses</td> <td> <ul style="list-style-type: none"> ▪ Ferry terminals in Bay Area ▪ Planned Bus Rapid Transit (BRT) in Fresno </td> </tr> </table>	Rail	<ul style="list-style-type: none"> ▪ Caltrain ▪ Altamont Corridor Express (ACE) ▪ Coaster ▪ Metrolink ▪ Amtrak ▪ Heavy and light rail ▪ Bay Area Rapid Transit (BART) ▪ San Francisco Muni Metro 	<ul style="list-style-type: none"> ▪ Metro Rail in Los Angeles ▪ Sacramento Regional Transit light rail ▪ Sprinter ▪ San Diego Trolley ▪ Santa Clara VTA light rail ▪ 12 proposed California high-speed rail station 	Ferries and buses	<ul style="list-style-type: none"> ▪ Ferry terminals in Bay Area ▪ Planned Bus Rapid Transit (BRT) in Fresno
	Rail	<ul style="list-style-type: none"> ▪ Caltrain ▪ Altamont Corridor Express (ACE) ▪ Coaster ▪ Metrolink ▪ Amtrak ▪ Heavy and light rail ▪ Bay Area Rapid Transit (BART) ▪ San Francisco Muni Metro 	<ul style="list-style-type: none"> ▪ Metro Rail in Los Angeles ▪ Sacramento Regional Transit light rail ▪ Sprinter ▪ San Diego Trolley ▪ Santa Clara VTA light rail ▪ 12 proposed California high-speed rail station 			
Ferries and buses	<ul style="list-style-type: none"> ▪ Ferry terminals in Bay Area ▪ Planned Bus Rapid Transit (BRT) in Fresno 					

³³ Source for all Appendix exhibits: McKinsey Global Institute analysis.

Exhibit A3

Tool 3: Add units to existing single-family homes

Parameter	Assumption
California single-family housing stock	7.41 million—per 2013 U.S. Census, American Community Survey
Single family housing stock within one-half mile of transit hub	723,000—per GIS analysis
In-home accessory dwelling unit (ADU) uptake (e.g., spare bedroom or basement conversion)	5%
Detached ADU uptake (e.g., new backyard structure)	1%
Co-living uptake	1%
In-home ADU unit uplift	+1 unit
Detached ADU unit uplift	+1.5 units—per <i>Yes in my backyard: Mobilizing the market for secondary units</i> average ADU unit increase
Co-living unit uplift	+5 units

Exhibit A4

Tool 4: Add units to underutilized urban land zoned for multifamily development

Parameter: Potential uplift in housing units	Assumption %
Los Angeles County	9 Calculated bottom-up through GIS mapping of zoned capacity and current unit-to-parcel ratios; assumes non-vacant parcels of two or more units at less than 50% utilization will be built to maximum zoned density
San Francisco	10 Calculated bottom-up through GIS mapping of zoned capacity and current unit-to-parcel ratios; assumes non-vacant parcels of two or more units at less than 50% utilization will be built to maximum zoned density
Other California cities with greater than 100,000 residents	5–15 A conservative estimate based on observed land underutilization in Los Angeles and San Francisco

Exhibit A5

Tool 5: Develop affordable and adjacent single-family housing

Parameter	Assumption
Minimum lot size	5 acres
Maximum distance from existing development	1 mile
Maximum distance from job center	20 miles
Maximum distance from transit hub	5 miles (for list of transit hubs, see Tool 2)
Density	15 single-family units per acre

Exhibit A6

Tool 6: Incentivize local governments to approve already planned-for housing

Parameter	Assumption %	
Average baseline Regional Housing Needs Allocation (RHNA) percentage met in Bay Area	Very low (0–50% of area median income [AMI])	30
	Low (50–80% of AMI)	26
	Moderate (80–120% of AMI)	26
	Above moderate (>120% of AMI)	100
Improvement in RHNA compliance	10–30 on baseline compliance percentage	
Households in Bay Area	10 of total California households	

Exhibit A7

Tool 7: Accelerate land-use approvals

Parameter	Assumption	
Density (units per acre)	Single family	3
	Multifamily	19
Project size (acres)	Single family	45
	Multifamily	7
Number of units	Single family	147
	Multifamily	141
Average land cost	\$500,000 per acre	
Land option cost per month	0.5% of land price	
Professional fees per unit	\$500–\$6,000	
Staff overhead per project per month	\$5,000	
Project type (%)	Single family	75
	Multifamily	25
Level of environmental review required (%)	No rezoning	20
	Specific plan	3
	Zoning change	57
	Environmental impact report (EIR) with no litigation	20
	EIR with litigation	1

Exhibit A8**Tool 8: Raise construction productivity**

Parameter	Assumption	
Construction cost per square foot (\$)	Single-family	160
	Multifamily	175
Size of a standard housing unit	970 square feet	
Number of units needed per year to close California's housing gap	350,000	
Product split (%)	Single-family	75
	Multifamily	25

Exhibit A9**Tool 9: Deploy modular construction**

Parameter	Assumption
Average multifamily build time	20 months
Percentage of time saved with modular construction	20
Interest rate on construction loan	5%
Percentage of construction financed at start time	100
Labor as a proportion of construction costs	40%
Construction cost per square foot	\$175 (multifamily)
Standard unit size	970 square feet
Percentage of construction cost savings	15
Number of multifamily housing units needed per year to close California housing gap	87,500 units
Percentage of multifamily projects >50 units	60
Conservative discount on savings	10%
Adoption rate of modular construction technology	Likely uptake: 10%
	Optimistic uptake: 50%

Exhibit A10**Tool 10: Accelerate construction permitting**

Parameter	Assumption	
Permitting timeline (days)	Complex	240
	Moderate	60
	Streamlined	30
Average land cost	\$500,000 per acre	
Percentage of land acquisition cost financed	Down payment	20
	Financed	80
Annual interest rate	5%	
Staff overhead per project per month	\$5,000	
Project type (%)	Single-family	75
	Multifamily	25
Breakdown by complexity of permitting process (%)	Complex	10
	Moderate	80
	Streamlined	10
Number of units needed per year to close California housing gap	350,000	

Exhibit A11**Tool 11: Reduce housing operating costs**

Parameter	Assumption	
Annual operations and maintenance costs per unit	\$4,500–\$6,500	
Savings potential	5–10%, based on interviews with housing operators	
California multifamily units	2016	4.3 million
	2025	6.3 million
Uptake	5%	

Exhibit A12**Tool 12: Align development impact fees with housing objectives**

Parameter	Assumption
Average non-California development impact fees for \$200,000 single-family home	\$8,510 total, or \$5,791 excluding utility interconnections—as per Duncan Associates 2012 national Impact Fee Survey
Average California development impact fees for \$200,000 single-family home	\$31,014 total, or \$22,154 excluding utility interconnections
Average non-California development impact fees for \$100,000 multifamily unit	\$4,807 total, or \$3,822 excluding utility interconnections
Average California development impact fees for \$100,000 multifamily unit	\$18,807 total, or \$14,618 excluding utility interconnections
Estimated California exactions	\$3,000 per unit
Estimated exactions frequency	25%
Product split (%)	Single-family 75
	Multifamily 25

Exhibit A13**Tool 13: Prioritize state and local funding for affordable housing**

Parameter	Assumption
Affordable housing funds from state general revenue	\$400 million
State general obligation bond principal	\$3 billion
State general obligation bond frequency	9 years
County general obligation bond principal	\$500 million
County general obligation bond frequency	10 years
Number of urban counties	18
Real estate transaction fee	\$75
Annual California real estate transaction volume	4.0 million–9.6 million transactions
Housing cost per unit	\$260,000
Loan-to-value ratio	70%

Exhibit A14**Tool 14: Attract new investors in affordable housing**

Parameter	Assumption
California Fortune 500 employers: excess cash	Total cash minus operating cash (i.e., 2% of revenue)
California Fortune 500 employers: cycle time of assets (years)	Cash 1
	Short-term investments 1
	Long-term investments 5
Percentage of cash and investments contributed to affordable housing	0.1%
Loan-to-value ratio	70%
Housing cost per unit	\$260,000

BIBLIOGRAPHY

A

Association of Bay Area Governments Geographic Information Systems, gis.abag.ca.gov/.

Association of Bay Area Governments, *Regional housing need plan: San Francisco Bay Area, 2014–2022*, 2013.

Association of Bay Area Governments and Metropolitan Transportation Commission, *Jobs-housing connection strategy*, May 2012.

Atkinson-Palombo, Carol, and Wesley Marshall, *Quantifying transit-oriented development's potential contribution to federal policy objectives on transportation-housing-energy interactions: Final report*, US Department of Transportation University Transportation Centers Program and Center for Transportation and Livable Systems, March 2013.

B

Ballotpedia, "Bond issues on the ballot," ballotpedia.org/Bond_issues_on_the_ballot.

Bay Area Inclusionary Housing Initiative, "Inclusionary housing advocacy toolkit."

Bay Area Metropolitan Transportation Commission, www.mtc.ca.gov/.

Block, Betsy Baum, Henry Gascon, Peter Manzo, and Adam D. Parker, *Struggling to get by: The real cost measure in California 2015*, United Ways of California, July 2015.

Blue Sky Consulting Group and Center for Housing Policy, *Analysis of the fiscal and economic effects of new housing construction in California*, prepared for the Department of Real Estate, Department of Housing and Community Development, and California Housing Finance Agency, June 2010.

BRIDGE Housing, "California's largest modular affordable development under construction in San Leandro," press release, October 2015.

C

California Association of Realtors, "Market data," 2016, www.car.org/marketdata/data/haitraditional/.

California Department of Housing and Community Development, *Pay to play: Residential development fees in California cities and counties, 1999*, Division of Housing Policy Development, August 2001.

California Department of Housing and Community Development, *Raising the roof: California housing development projections and constraints, 1997–2020*, 2000.

California Department of Housing and Community Development, "Regional Housing Needs Assessment (RHNA)," www.hcd.ca.gov/housing-policy-development/housing-element/hn_phn_regional.php.

California Department of Veterans Affairs, "Proposition 41 notice of funding availability released," press release, March 9, 2015.

California High-Speed Rail Authority, www.hsr.ca.gov/.

California Housing Partnership Corporation, *Update on California's affordable housing crisis: The critical role of housing access and affordability in reducing poverty*, April 2015.

California Legislative Information, "SB-879: Affordable Housing Bond Act of 2018," bill analysis.

California State Treasurer, "Treasurer Chiang's affordable housing initiative moves forward," press release, October 21, 2015, www.treasurer.ca.gov/news/releases/2015/20151021.asp.

California Tax Credit Allocation Committee, California Debt Limit Allocation Committee, Department of Housing and Community Development, and California Housing Finance Agency, *Affordable housing cost study: Analysis of the factors that influence the cost of building multi-family affordable housing in California*, October 2014.

Carliner, Michael, "New home cost components," *Housing Economics*, March 2003.

Cervero, Robert, and Roger Gorham, "Commuting in transit versus automobile neighborhoods," *Journal of the American Planning Association*, volume 61, issue 2, 1995.

Chapple, Karen, Jake Wegmann, Alison Nemirow, and Colin Dentel-Post, *Yes in my backyard: Mobilizing the market for secondary units*, Center for Community Innovation, 2011.

Chronicle of Philanthropy, “California: 2012 giving profile,” www.philanthropy.com/interactives/how-america-gives#state/06.

City and County of San Francisco, “Inclusionary housing program fee schedule 2016,” Mayor’s Office of Housing and Community Development, sfmohcd.org/inclusionary-housing-program-fee-schedule-2016.

City and County of San Francisco, “Process overview,” Planning Department, sf-planning.org/process-overview.

City of Fresno, “Business-friendly Fresno: Planning and building process,” www.fresno.gov/Government/MayorsOffice/businessfriendlyfresno.htm.

City of Los Angeles, “Plan check and permit,” Department of Building and Safety, ladbs.org/services/core-services/plan-check-permit.

City of Sacramento, “Sample analysis: Development fees and exactions,” June 2003.

City of San Jose, “Attachment A-1: Inclusionary housing ordinance compliance options procedure for build on-site option,” www.sanjoseca.gov/DocumentCenter/View/57911.

County of Santa Clara, “Affordable housing bond measure headed to November ballot,” press release, June 21, 2016.

Crane, Randall, Abel Valenzuela, Dan Chatman, Lisa Schweitzer, and Peter J. Wong, *California travel trends and demographics study: Final report*, California Department of Transportation, Division of Transportation Planning, Office of State Planning, December 2002.

D

Drummer, Randy, “On a roll, US office market demand expected to stay strong through 2016: Tenants and investors show strong preference for newer buildings in CBDs,” CoStar, January 28, 2015.

F

Federal Financial Institutions Examination Council, “Community Reinvestment Act,” www.ffiec.gov/cra/default.htm.

Flaming, Daniel, Patrick Burns, and Michael Matsunaga, *Where we sleep: Costs when homeless and housed in Los Angeles*, Economic Roundtable, 2009.

Fresno Bus Rapid Transit Master Plan, www.fresno.gov/DiscoverFresno/PublicTransportation/Plans/BRT.htm.

H

Hernandez, Jennifer, David Friedman, and Stephanie DeHerrera, *In the name of the environment: Litigation abuse under CEQA*, Holland & Knight, August 2015.

Hernandez, Jennifer, David Friedman, and Stephanie DeHerrera, *In the name of the environment update: CEQA litigation update for SCAG region (2013–2015)*, Holland & Knight, July 2016.

Howard, Andrea, *Development impact fees and multi-family housing: A feasibility study*, thesis presented to California State University, Sacramento, 2013.

I

Institute of Governmental Studies, “Proposition 1C: Housing and emergency shelter,” University of California, Berkeley, 2006.

Internal Revenue Service, “SOI tax stats—historic table 2,” www.irs.gov/uac/soi-tax-stats-historic-table-2.

J

Jones, Christopher, and Daniel M. Kammen, “Spatial distribution of U.S. household carbon footprints reveals suburbanization undermines greenhouse gas benefits of urban population density,” *Environmental Science and Technology*, volume 48, issue 2, 2014.

K

Keyser Marston Associates, “Construction cost analysis: Affordable vs. market-rate apartment development,” memorandum to Richard C. Gentry, president and CEO, San Diego Housing Commission, September 2011.

Kolko, Jed, *Making the most of transit: Density, employment growth, and ridership around new stations*, Public Policy Institute of California, February 2011.

L

Lee, Christopher, *2015 NAA survey of operating income & expenses in rental apartment communities*, National Apartment Association, August 2015.

Legislative Analyst’s Office, “Proposition 39: Analysis by the Legislative Analyst,” 2000 general election, vig.cdn.sos.ca.gov/2000/general/pdf/39.pdf.

Los Angeles County GIS Data Portal, egis3.lacounty.gov/dataportal/.

Los Angeles Housing and Community Investment Department and Department of City Planning, "Committee transmittal: Joint reports back relative to affordable housing policy options, council files 13-1389, 13-1624 and 14-1325," letter to the Honorable Gilbert A. Cedillo and the Honorable Jose Huizar, November 17, 2015.

Los Angeles Planning and Land Use Committee, "Committee transmittal: Feasibility of implementing a 'value capture' policy, council file no. 14-325," letter to members of the City Council, May 27, 2016.

M

McBride, Bill, "Office space: Negative absorption and new construction," Calculated Risk blog, July 2009.

McGraw-Hill Construction, *Prefabrication and modularization: Increasing productivity in the construction industry*, SmartMarket report, 2011.

McKenzie, Brian, *Who drives to work? Commuting by automobile in the United States: 2013*, US Census Bureau, August 2015.

McKinsey Global Institute, *A blueprint for addressing the global affordable housing challenge*, October 2014.

Metropolitan Transportation Commission, *How are Bay Area workers getting to their jobs?* December 2015.

Metropolitan Transportation Commission, *One Bay Area Grants*, mtc.ca.gov/our-work/invest-protect/focused-growth/one-bay-area-grants.

Metropolitan Transportation Commission Open Data, dataportal.mtc.opendata.arcgis.com/datasets?q=Policy.

Mullen, Clancy, *National impact fee survey: 2012*, Duncan Associates, August 2012.

N

Transportation Research Board, *Traveler response to transportation system changes handbook, third ed.: Chapter 17, Transit-oriented development*, The National Academies of Sciences, Engineering, and Medicine, 2016.

Newman, Matt, and Marianne O'Malley, *Property taxes: Why some local governments get more than others*, Legislative Analyst's Office, August 1996.

O

Office of the State Treasurer, *Fast facts 2015 totals*, 2016.

OpenGov Foundation, "Section 415.7: Off-site affordable housing alternative," 2013.

P

The Planning Report, "A new tool for urban economic development: EIFDs demystified," June 2015.

Point2Homes, "California," www.point2homes.com/US/Neighborhood/CA-Demographics.html.

R

Rapino, Melanie A., and Alison K. Fields, "Mega commuting in the U.S.: Time and distance in defining long commutes using the 2006–2010 American Community Survey," US Census Bureau, presented at the Association for Public Policy Analysis and Management fall conference in Baltimore, November 8–10, 2012.

Reaser, Lynn, and Cathy L. Gallagher, *Opening San Diego's door to lower housing costs*, Fermanian Business and Economic Institute at Point Loma Nazarene University, 2015.

S

Sacramento County GIS Portal, www.sacgis.org/Pages/default.aspx.

San Diego Housing Commission, *Addressing the housing affordability crisis in San Diego and beyond: An action plan for San Diego civic leaders*, November 2015.

San Diego Regional Data Warehouse, www.sandag.org/index.asp?subclassid=100&fuseaction=home.subclasshome.

San Francisco City and County Open Data Portal, data.sfgov.org/.

Senate Committee on Transportation and Housing, "SB 879: Affordable Housing Bond Act of 2016," bill analysis, March 2016.

Senate Governance and Finance Committee, "SB 391: California homes and jobs act of 2013," bill analysis, April 2013.

Smith, Ryan E., "Permanent modular construction: Process, practice, performance," National Institute of Building Sciences and Modular Building Institute Educational Foundations, September 2014.

State of California, "2011 filing season statistics," Franchise Tax Board, www.ftb.ca.gov/Archive/AboutFTB/Tax_Statistics/2011_Filing_Season_Statistics.shtml.

State of California, "Tax rates, exemptions, and standard deductions," Franchise Tax Board, 2014, www.ftb.ca.gov/Archive/AboutFTB/Tax_Statistics/Reports/2014/2014_Annual_Report_Statistical_Appendix_Tables.pdf.

State of Washington, *Affordable housing cost study*, Department of Commerce, September 2009.

Statistic Brain, "Commuter driving statistics," www.statisticbrain.com/commute-statistics/.

Stiffler, Natalie L., *The effect of transit-oriented development on vehicle miles traveled: A comparison of a TOD versus a non-TOD neighborhood in Carlsbad, CA*, thesis presented to California Polytechnic State University, San Luis Obispo, 2011.

T

Taylor, Mac, *California's high housing costs: Causes and consequences*, Legislative Analyst's Office, March 2015.

Taylor, Mac, *Perspectives on helping low-income Californians afford housing*, Legislative Analyst's Office, February 2016.

Taylor, Mac, *Understanding California's property taxes*, Legislative Analyst's Office, November 2012.

Transit Cooperative Research Program, *Effects of TOD on housing, parking, and travel*, TCRP report number 128, August 2008.

Truckee Railyard, "The plan."

U

United States Census Bureau, "Quick facts: California," www.census.gov/quickfacts/table/PST045215/06.

United States Census Bureau, American fact finder, www.factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.

United States Environmental Protection Agency, *Greenhouse gas emissions from a typical passenger vehicle*, May 2014.

United States Environmental Protection Agency, "Greenhouse gas emissions: Overview of greenhouse gases," www.epa.gov/ghgemissions/overview-greenhouse-gases#carbon-dioxide.

United States Environmental Protection Agency, "Greenhouse gas emissions: US greenhouse gas inventory report, 1990–2014," www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014.

United States Department of Labor, "Economy at a glance: California," Bureau of Labor Statistics, August 2016, www.bls.gov/eag/eag.ca.htm.

US Department of Transportation, "Summary of travel trends: 2009 national household travel survey," Federal Highway Administration, nhts.ornl.gov/2009/pub/stt.pdf.

UC Berkeley, "Suburban sprawl cancels carbon-footprint savings of dense urban cores," *Berkeley News*, January 2014.

W

Walesh, Kim, "Strategies to enhance San Jose's fiscal health," City of San Jose, *Envision San Jose 2040*, January 2016.

Z

Zhang, Ming, "Can transit-oriented development reduce peak-hour congestion?" *Transportation Research Record*, volume 2174, 2014.

Zillow Research, August 2016, www.zillow.com/research/.

RELATED MGI AND MCKINSEY RESEARCH



Bridging global infrastructure gaps (June 2016)

Global infrastructure systems are straining to meet demand, but the current spending trajectory will lead to worsening gaps. The world today invests some \$2.5 trillion a year on transportation, power, water, and telecommunications systems, but it is not enough. Yet there are solutions to unlock financing and make the sector more productive.



Infrastructure productivity: How to save \$1 trillion a year (January 2013)

Just keeping pace with projected global GDP growth will require an estimated \$57 trillion in infrastructure investment in the period to 2030—60 percent more than total spending over the past 18 years. Best practices, such as improving the selection of projects, streamlining their delivery, and making the most of existing infrastructure, could raise infrastructure productivity and save as much as \$1 trillion a year if scaled globally.



Urban world: The global consumers to watch (April 2016)

Dramatic demographic shifts are transforming the world's consumer landscape. Just three groups of consumers are set to generate half of global urban consumption growth from 2015 to 2030, and have the power to reshape global consumer markets.



Urban America: US cities in the global economy (April 2012)

US cities dominate their host economy like in no other region, and will continue to be important players in the urban world, contributing more than 10 percent of global GDP growth over the next 15 years. The United States has a broader base of large cities than any other region, and that explains their greater economic clout. Of the 600 cities that MGI expects will account for 60 percent of global GDP growth by 2025, nearly one in seven is in the United States.



Tackling the world's affordable housing challenge (October 2014)

Dramatic demographic shifts are transforming the world's consumer landscape. Just three groups of consumers are set to generate half of global urban consumption growth from 2015 to 2030 and have the power to reshape global consumer markets.



McKinsey Insights app

Explore insights from across McKinsey, MGI, and the *McKinsey Quarterly*—all delivered seamlessly to your mobile devices. Broaden your knowledge and widen your perspective on our latest thinking on the challenging issues facing senior leaders, spanning all industries, functions, and geographies. Available for both Apple and Android devices.

www.mckinsey.com/mgi

E-book versions of selected MGI reports are available at MGI's website, Amazon's Kindle bookstore, and Apple's iBooks Store.

Download and listen to MGI podcasts on iTunes or at www.mckinsey.com/mgi/publications/multimedia/

Cover image: © Danielle Reid/EyeEm/Getty Images.



McKinsey Global Institute
October 2016
Copyright © McKinsey & Company
www.mckinsey.com/mgi

 @McKinsey_MGI
 McKinseyGlobalInstitute