UCLA Lewis Center for Regional Policy Studies

Regional Housing Need in California:

The San Francisco Bay Area

July 2020

Acknowledgments

For helpful discussions and feedback, we are indebted to Ben Metcalf and Paul Campos.

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Data Resources

The Lewis Center provides a list of data available across our research areas for students and stakeholders to conduct their own analysis and answer pressing questions about the Los Angeles region and beyond. For those interested, we have published the relevant census data and correspondence between the state Department of Housing and Community Development and the Association of Bay Area Governments required to replicate all calculations in the report. These data and other resources can be found at: lewis.ucla.edu/southern-california-data-resources/ and is titled "Bay Area Regional Housing Needs."

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Abstract

This report evaluates California's official housing target for the San Francisco Bay Area. While the Bay Area received a substantially larger target for the upcoming planning cycle than it had in the previous cycle, the relative increase in the Bay Area target was a lot smaller than that for the state's other major metropolitan region, Los Angeles, which forms part of the Southern California Association of Governments. We argue that the Bay Area's lower target reflects, in part, the state's failure to account for the fact that the Bay Area leads the nation in supercommuters, many of whom work in the Bay Area but have been driven by the region's housing shortage to live outside of it. State law requires an adjustment for regional "jobs-housing imbalance," yet none was made. The Bay Area target was also deflated by the Association of Bay Area Governments' choice of "comparator regions," a choice which presupposed that the Bay Area should be benchmarked against similarly housing-supply-constrained regions; and by the state's decision not to fully account for the needs of presently cost-burdened households. Altogether, we estimate that the announced target of 441,000 new housing units was at least 245,000 units short of the mark.

Table of Contents

Introduction 5

Background 7

Findings 8

- Jobs-Housing Imbalance 11
- Cost-Burdened Households 14
  - Replication of HCD's Approach: Adjusting the "Forecasted New Households" Subset of the "Total Households" Base 17
  - Adjusting the "Total Households" Base 18
- Overcrowding 18
- Vacancy 19

Conclusion 20

Introduction

This report evaluates the Department of Housing and Community Development's (HCD) recently-announced determination of the regional housing need for the San Francisco Bay Area. We think this determination is too low. We approach the question, "What Is the Bay Area's Housing Need?" not from first principles, on which many people can reasonably disagree, but by using the methodology prescribed by California law. We identify several problems with Bay Area's current housing target for the Bay Area, and we show how the target would change if these problems were corrected.

For the upcoming planning period, the state has assigned to the Association of Bay Area Governments (ABAG) a target of 441,176 housing units. This target is substantially higher than the region's target for the last period, which reflects the application of new statutory requirements. However, on a relative basis, the ABAG increase (135%) was substantially smaller than the increase for the state's other major metropolitan region, the Southern California Association of Governments, or SCAG (229%).

On an absolute basis, the new ABAG target is also incongruously small. For example, ABAG's target for market-rate housing translates into annualized production of about 22,000 units. Bay Area jurisdictions are now permitting about 20,000 market-rate housing units annually. Deed-restricted affordable production amounts to a paltry 2,500 units per year.

To put these numbers in context, the legislature, building on research by the Legislative Analyst's Office, has embraced the goal of doubling statewide production, and Gov. Newsom has called for a four-fold increase.[1] It's very doubtful that these goals will be met without huge increases in market-rate production in cities where prices are high enough to make midrise and highrise construction viable. The Bay Area is ground zero. Meeting state housing production goals requires zoned capacity where there is demand.[2]

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[1] Christopher S. Elmendorf, Eric Biber, Paavo Monkkonen & Moira O'Neill, Superintending Constraints on Housing Development: How California Can Do It Better (July 8, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3614085.

[2] Paavo Monkkonen & Spike Friedman, "Not Nearly Enough: California Lacks Capacity to Meet Lofty Housing Goals" (UCLA Lewis Center Issue Brief, 2019), https://www.lewis.ucla.edu/research/california-lacks-capacity-to-meet-lofty-housing-goals/.

How did HCD arrive at the target that it set? As the law requires, the department started with a forecast of projected household growth. The department then supplemented this "projected new households" number with adjustments for existing need, as reflected in, for example, the Bay Area's high rates of cost-burdened and overcrowded households. However, as we show in this report, and the associated code and data files, the department's adjustments reflect one major omission and several questionable assumptions. Specifically:

- **The department did not make the statutorily required adjustment for "jobs-housing imbalance."** A region has an imbalance between jobs and housing if workers are forced into long commutes by a lack of housing near centers of employment. The job-housing adjustment factor is particularly important for the Bay Area, where extraordinarily high housing prices near the employment meccas of San Francisco, San Jose, Oakland, and the Silicon Valley have caused the region to earn the dubious distinction of being the nation's leader in supercommuters.
- **The department accepted ABAG's preferred set of "comparator regions," but ABAG selected those regions on the basis of criteria that favored supply-constrained regions, thereby concealing the extent of the housing shortage in the Bay Area.** Whereas the housing target for the Sourthern California Association of Governments was set by comparing local housing-market conditions to nationally typical conditions, the ABAG target was set by comparing conditions in the Bay Area to those in other metro regions that severely restrict building. The comparison, moreover, was made along dimensions that are *symptoms* of restricted housing supply, such as "number of housing units built since 2005," "income inequality," and "the share of residents who recently moved to the region." So where Southern California was compared to the nation overall — including places that build and places that don't — the Bay Area was compared mostly to places that do not build, making its own conditions look less anomalous.
- **The department did not make allowances for presently cost-burdened households.** Legislative changes since the last planning cycle require the department to account for current needs as well as projected future needs. The department followed this directive with respect to overcrowding and vacancy adjustments, yet the department applied the cost-burden adjustment only to the "projected new households" forecast. It made no allowances for presently cost-burdened households, of which the Bay Area has many.

What happens if these missteps are corrected? In short, the Bay Area's housing number goes up. To preview the bottom line:

- One can adjust for jobs-housing imbalances in a number of ways, but we see no way to reach the conclusion that the region which leads the nation in supercommuters has no jobs-housing imbalance at all. Our recommended adjustment would add about 138,000 units to the ABAG count; the lowest defensible adjustment is about 86,000 units.

- The overcrowding adjustment should have added about 115,000 units, rather than 95,000 units.
- Fully adjusting for the presently cost-burdened households would add about 150,000 units, rather than 9,000 units, to ABAG's target.

Together, these corrections would **add at least 245,000 units to ABAG's target.**

Background

The regional housing needs determination ("RHND") is the fulcrum on which nearly everything in California's housing framework turns. It establishes both an overall regional target for new housing over the eight-year planning cycle, and a division of that target into four affordability bands. Roughly 40% of the target must be accommodated on sites zoned for statutory minimum densities (30 units per acre in urban counties) or otherwise capable of accommodating lower-income housing. Whether subsidized or market-rate housing is ultimately developed on these sites, their existence ensures that some relatively affordable housing types, such as smaller units in multifamily buildings, can be produced.

Responsibility for setting the RHNDs is lodged in the Department of Housing and Community Development (HCD). While the department sets the targets in consultation with regional associations of local governments, the local role is advisory only. Gov't Code 65584.01(b)(2).

The foundation of the RHND is a forecast of household growth. This is a deeply problematic basis on which to set housing targets, since population trends are a consequence of land-use policies.[3] A region with very restrictive land-use controls will have low rates of household growth, but this hardly signifies that the region has little need for new housing. The region may well have massive housing need, albeit need which manifests as high housing prices and brutally long commutes rather than as high rates of new household formation. The Bay Area is a case in point.

The legislature has begun to wrestle with these problems. SB 375, a landmark climate-and-transportation bill passed in 2008, told HCD to account for "[t]he relationship between jobs and housing, including any imbalance between jobs and housing," when setting the regional targets. Gov't Code 65584.01(b)(1)(G).

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[3] Paavo Monkkonen, Michael Manville & Spike Friedman, "A Flawed Law: Reforming California's Housing Element" (UCLA Lewis Center Issue Brief, 2019), https://www.lewis.ucla.edu/research/flawed-law-reforming-california-housing-element/.

In 2018, the legislature made further and very substantial additions to the framework. SB 828 established a "healthy housing market" norm, directing HCD to compare rates of housing-cost burden, overcrowding, and vacancy in the target region to those in "comparable regions of the nation." Gov't Code 655841(b)(1).

SB 828's overarching objective was to fold consideration of present needs into the RHND. Whereas the planning framework previously assumed a more-or-less healthy status quo, such that regional housing stocks need augmentation only in proportion to projected household growth, SB 828 frankly acknowledged that the status quo may be the very unhealthy byproduct of decades of underproduction. In such cases, cost-burden, overcrowding, and other adjustments should be "based on the region's total projected households, which includes existing households as well as projected households." Gov't Code 65584.01(b)(2) (emphasis added).[4]

Findings

This section replicates and extends HCD's principal adjustments to the baseline, population-forecast measure of Bay Area housing need. We consider jobs-housing imbalance, cost-burdened households, overcrowding, and vacancy rates.

For the jobs-housing imbalance adjustment, we recommend an approach based on the absolute number of commute-burdened households, as opposed to benchmarking the Bay Area's commute-burdened household share against that in comparator regions. SB 375 aimed to make California a national leader in climate policy, not merely to bring California "up to the national average" with respect to long, climate-polluting commutes.

For the cost-burden and overcrowding adjustments, which are required by statute to be based on comparator regions, we show how the choice among comparator regions affects the adjustment. We compare the comparators, as it were, contrasting: (1) the seven metro areas picked by ABAG as comparators; (2) a "national norm" comparison set in which every substantial metro area in

[4] One significant limitation of SB 828 is that it doesn't provide for adjustments based on housing prices as such. High cost-burden and low vacancy-rates are to a large extent disequilibrium phenomena: as prices go up following a positive demand shock, vacancy rates will return to normal, and — if new supply is not forthcoming — less affluent households will simply leave the region.

the United States outside of the Bay Area counts as a comparator;[5] and (3) a "high demand, high growth" alternative, anchored by metro areas that expanded their housing supply by at least 30% from 2000 to 2013.[6]

As among the comparator sets, the "high-growth, high-demand" benchmark is most appropriate for California's major metropolitan regions. While the national benchmark has an obvious logic, it includes declining regions, such as the Rust Belt, which are inapt comparators because a lot of their housing stock consists of stranded assets, whose market price is less than the cost of replacement. Such housing is very affordable while it remains standing but its low price is an indicator of regional decline, not a healthy housing market.

But just as it makes no sense to benchmark California's high-demand metropolitan regions against the declining cities of the Midwest, it is equally misguided to use the notoriously supply-constrained metros of the Northeast and Northwest as comparators. SB 828 announces a "healthy housing market" norm, and the legislative history makes clear that the bill was intended to bring about large-scale increases in market-rate production. The most appropriate comparators, then, are metro regions that have accommodated positive economic shocks by allowing robust expansion of the housing stock.[7]

This is not to say that California should "sprawl" like Atlanta, Houston, Dallas, or Phoenix. Our state laws privilege higher density patterns of development. But if we're not going to sprawl then we need to make it easy to build dense housing in high-demand places. The housing framework as augmented by SB 828 provides a mechanism to do this. The first step is to make large upward adjustments to the baseline, population-forecast RHND, based on housing market dynamics in

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[5] More specifically, we use the combined statistical areas designated by the U.S. Office of Management and Budget and the U.S. Census.

[6] These metro areas are drawn from Edward Glaeser & Joseph Gyourko, "The Economic Implications of Housing Supply," Journal of Economic Perspectives 32:3-30 (2018), fig.3 (2018). Glaeser and Gyourko study housing stock growth at the CBSA level. In our tables, we use the corresponding CSA, because CSAs are the geographic units employed by ABAG and HCD for making cost-burden, vacancy, and overcrowding adjustments. No doubt there are many other reasonable ways to define a set of "high growth" comparator jurisdictions, each of which would probably yield somewhat different results.

[7] These metro areas are drawn from Edward Glaeser & Joseph Gyourko, "The Economic Implications of Housing Supply," Journal of Economic Perspectives 32:3-30 (2018), fig.3 (2018). Glaeser and Gyourko study housing stock growth at the CBSA level. In our tables, we use the corresponding CSA, because CSAs are the geographic units employed by ABAG and HCD for making cost-burden, vacancy, and overcrowding adjustments. No doubt there are many other reasonable ways to define a set of "high growth" comparator jurisdictions, each of which would probably yield somewhat different results.

relatively affordable regions of the nation. The second is to structure intraregional allocation of the RHND so that most of the new capacity gets assigned to jurisdictions with high prices and good or readily expanded systems of mass transit, where the market will provide abundant dense housing as soon as local governments allow it to be built.

One thing is clear: whatever may be the very best set of comparator regions, it cannot be found using the algorithm that ABAG developed to select comparators, and which HCD at least tacitly approved. That algorithm measured the "similarity" between the ABAG region and candidate comparator regions with respect to these demographic criteria:[8]

- Income inequality (GINI coefficient)
- Share of region's population which consists of people who "recently moved" to the region.
- Housing units built since 2005
- Share of workers employed in "professional occupations"
- Share of workers employed in "service occupations"
- High income households
- Low income households
- Households whose income is less than twice the federal poverty level
- Labor force age 21-30
- Labor force age 15-65
- Seniors
- Youths

There is a serious mismatch between these criteria and the purpose of SB 828. Again, SB 828 calls for a comparison to regions with healthy housing markets, not to regions with supply-constrained markets. Yet ABAG apparently did not evaluate potential comparator regions for the health of their housing market, by any metric. What it did instead, whether purposefully or inadvertently, was to search for regions that are similar to the Bay Area in terms of specific demographic criteria that are manifestations of ABAG's very unhealthy housing market. A region with high demand and major housing-supply constraints will manifests its "similarity" to the Bay Area through:

- a small number of housing units built since 2005
- a low number of "recent movers" from outside the region
- high levels of income inequality (as the middle class gets priced out, what's left are rich people competing for expensive market-rate housing and poor people who have a subsidized-housing toehold)

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[8] Letter from Alix A. Bockelman, Deputy Executive Director, Policy, ABAG, to Ms. Megan Kirkeby, Assistant Deputy Director for Fair Housing, HCD, May 28, 2020, Attachment 3.

- an unusually high share of professional workers, i.e., workers who can afford the expensive housing
- an unusually low share of service workers (workers unable to afford expensive housing in the supply-constrained market will commute in from outside the region, or be replaced by automation)

While we have undertaken to replicate ABAG's analysis using ABAG's preferred comparator regions, we do not endorse it.

Jobs-Housing Imbalance

Severe housing supply constraints plus a burgeoning economy have made the Bay Area a land of supercommuters. The resident working class is hollowing out, displaced by high housing costs to more affordable regions like the Central Valley.

If regional housing targets were set solely on the basis of projected household growth, California's housing framework would be at war with the state's climate-change and transportation goals. As price-induced displacement from the Bay Area manifests as faster growth in the Central Valley, the Central Valley would be deemed to have greater "need" than the Bay Area. As Central Valley communities rezone to accommodate that "need" while the Bay Area keeps its barricades up, the housing-price disparity between the two regions would worsen, causing more and more cost-burdened households to relocate eastward, leading to more and more supercommuters, clogged highways, greenhouse-gas emissions, and persistent spatial inequality.

Fortunately, the planning framework gives HCD a way to forestall this dynamic. The statute requires the department to consider "the relationship between jobs and housing, including any imbalance between jobs and housing," and to make a "determination in writing on the assumptions ... and methodology" will use to account for this factor in setting the regional target.[9] Gov't Code 65584.01(b). This provision was added to the statute by SB 375, the landmark climate-and-transportation bill.

However, to the best of our knowledge, the jobs-housing adjustment has never been applied. The department's failure to apply it is perhaps justified as to the many regions of the state in which nearly all workers are also residents. But for the Bay Area, the factor is absolutely essential. While

[9] To be clear, a determination in writing is required for each of the enumerated adjustment factors, not just the jobs-housing factor.

ABAG's Sustainable Communities Strategy nominally addresses *future* increases in in-commuting, it does nothing to address the housing needs of the hundreds of thousands of workers who commute in *today*.[10]

The statute is clear. HCD's determination of "*existing* and projected housing need" "shall reflect the achievement of a feasible balance between jobs and housing within the region." Gov't Code 65584.01(c)(1).[11] Mitigating *future* increases in in-commuting is not enough.

That the legislature was wise to require a present-need adjustment for job-housing imbalance is well illustrated by ABAG's own forecasting difficulties. In 2010, ABAG issued 30-year forecasts for regional growth in employment, households, and housing units. Looking back a few years later, ABAG acknowledged that from 2010 to 2015, the region had already realized **46% of the projected 30-year growth in jobs**, yet only **8% of the projected growth in housing**.[12] This massive disparity points up the need for a housing-jobs adjustment based on the current net-inflow of commuters, not just a fingers-crossed projection of what's likely to change in the next 30 years, or eight years.

We see two general strategies for a jobs-housing adjustment that includes present needs. One is to supplement the "total households" number by one new unit of housing for each household that is seriously commute-burdened on account of the region's housing shortage. This is similar to how HCD makes vacancy and overcrowding adjustments: the regional housing target is incremented by one unit for every extant dwelling unit that's occupied but "should" be vacant (to achieve a healthy vacancy rate). It also mirrors the jobs-housing adjustment in ABAG's own Sustainable Communities Strategy,[13] albeit while applying the adjustment to the current net inflow of commuters, rather than to the projected "net increase in net inflow."

As a rough proxy for workers who are commute-burdened on account of regional housing shortages, one could use either the net daily inflow of commuters to the ABAG counties, or the absolute number of supercommuters (e.g., commute of 90 minutes or more) who work in the

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[10] This partial response to the housing needs of in-commuters was the result of litigation.

[11] This determination must account for "regional employment projections in the applicable regional transportation plan," i.e., the Sustainable Communities Strategy, but it's not enough just to mitigate projected future in-commuting. The determination of *existing* as well as projected need must account for jobs-housing imbalances.

[12] Regional Forecast of Jobs, Population, and Housing, Plan Bay Area 2040 Final Supplemental Report (July 2017), p. 1.

[13] Regional Forecast of Jobs, Population, and Housing, Plan Bay Area 2040 Final Supplemental Report (July 2017), pp. 31-32.

ABAG counties. Multiplying these numbers by the "housing units per worker" ratio that ABAG's own planning documents deem healthy and appropriate for the region (1/1.41),[14] we obtain adjustments of:

- **137,524 units (supercommuters)**
- **85,689 units (net inflow)**

As between these candidate adjustments, we recommend the supercommuter adjustment, as it accounts for workers who have been driven by high housing prices near their place of employment to residences in the outer reaches of the ABAG region, not just for workers who commute from outside of the nine-county ABAG area. Put differently, a jobs-housing adjustment based on length of commute better corresponds to the purpose of SB 375 — reducing long, climate-damaging commutes — than does an adjustment based on the number of commuters who cross the regional border.

The other general approach to the jobs-housing adjustment is to use the comparator-region method, like HCD does for overcrowding and cost burden. We provide such results in the table below for illustration. However, we think the comparator-based approach is inapt with respect to the jobs-housing factor. The statute doesn't ask for it, and for good reason: SB 375 aimed to make California a national leader in progressive, greenhouse-gas-reducing transportation planning. Keeping pace with the average state or region is not enough.

A further problem with the comparator approach is defining the set of comparators. More populous regions tend to have longer commute times, which may be a function in part of the sheer number of people and jobs in the region (congestion). On the other hand, of the five regions that are larger than the Bay Area by number of workers, three are notorious for exclusionary land use policies (New York, Boston, and Los Angeles), and a fourth (the Washington DC area) is hardly an exemplar. So benchmarking ABAG against this comparison set would fail to capture the commuting burden caused by the Bay Area's land-use policies.

In any event, **Table 1** shows that even if HCD decided to use a comparator-based approach for the jobs-housing imbalance adjustment, ABAG would almost certainly receive a large increment to its RHND. **Indeed, using ABAG's own choice of comparator jurisdictions would result in a jobs-housing adjustment of 59,491 - 119,623 units.** The low-end estimate adjusts for commutes exceeding 90 minutes; the high-end for commutes exceeding 60 minutes, i.e., "long" as well as "super-long" commutes.

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[14] Regional Forecast of Jobs, Population, and Housing, Plan Bay Area 2040 Final Supplemental Report (July 2017), p. 13.

Table 1.
Jobs-Housing Adjustment: Commute Burden / Comparator Approach

	Share of Commutes > 60 min.	Share of Commutes > 90 min.
ABAG		
Rate	0.168	0.057
ABAG Comparators		
Rate	0.128	0.037
Difference	−0.04	−0.02
Adjustment (Units)	119,623	59,491
High-Growth Comparators		
Rate	0.082	0.023
Difference	−0.086	−0.034
Adjustment (Units)	259,038	102,286
Larger-Metro Comparators		
Rate	0.154	0.046
Difference	−0.014	−0.011
Adjustment (Units)	41,637	33,440

Data: ACS 5-year estimates (2014-2018) for counties, aggregated up to combined statistcal areas. Commute times are of persons who work in the county, irrespective of their place of residence. 'ABAG Comparators' are the seven metro areas hand-picked by ABAG as comparators. 'High-Growth Comparators' are the metro areas with housing-supply growth of at least 30% between 2000 and 2015. 'Larger-Metro Comparators' are the 5 U.S. metro areas whose number of worker-commuters equals or exceeds that of the ABAG region.

Cost-Burdened Households

The department upwardly adjusted ABAG's 6th cycle RHND by approximately **2%** (9,000 units) on account of cost-burdened households. To put this number in context, **the median rent in the Bay Area is more than 100% higher** than the median rent in the average metropolitan region of the United States.[15]

Tables 2 and **3** below illustrate how the cost-burden adjustment varies with (1) comparator regions, (2) data sources, and (3) the choice of whether to apply the adjustment only to the "hypothetical growth" in households, as opposed to the total-households baseline.

[15] Our comparison holds constant the number of bedrooms in the rental unit.

Table 2.
Cost-Burden Adjustments: HCD Method

	Cost Burden (lower income, CHAS)	Cost Burden (lower income per ABAG)	Cost Burden (higher income, CHAS)	Cost Burden (higher income per ABAG)	Cost Burden (overall, CHAS)	Cost Burden (overall, ACS)	Rent
ABAG							
Rate	0.585	0.666	0.159	0.163	0.334	0.346	$2,042
ABAG Comparators							
Rate	0.601	0.66	0.114	0.131	0.313	0.302	$1,411
Difference	0.016	−0.006	−0.045	−0.032	−0.021	−0.044	
Adjustment (Units)	−2,827	1,147	11,305	7,966	9,237	18,979	
High-Growth Comparators							
Rate	0.562		0.086		0.286	0.276	$1,150
Difference	−0.024		−0.073		−0.048	−0.07	
Adjustment (Units)	4,233		18,429		20,795	30,343	
Whole-Nation Comparators							
Rate	0.523		0.074		0.268	0.253	$959
Difference	−0.063		−0.084		−0.066	−0.094	
Adjustment (Units)	11,229		21,261		28,438	40,486	

Data: ACS 5-year estimates (2014-2018) for combined statistcal areas; CHAS 5-year estimates (2012-2016) for counties. Comparators are equally weighted. The `HCD method' for cost-burden adjustment is to multiply the population-forecast RHNDs for below-80th-percentile (income) and above-80th-percentile households by the difference between (1) the cost-burden rate for such households in the target region (ABAG) and (2) the cost-burden rate for such households in the target region. The 'overall, CHAS' and 'overall, ACS' adjustments are counterfactual adjustments that would have been made if HCD used the overall cost burden rate instead of rates disaggregated by income class. Rent is ACS median rent by number of bedrooms, averaged across bedroom categories, and is provided to illustrate the absolute burden of housing-supply barriers across regions.

The takeaway is that the stakes of the third decision are very high. Although the size of the adjustment factor is quite sensitive to the choice of comparators, the RHND itself changes by only 10,000–20,000 units when the factor is applied just to hypothetical new households. This is an artifact of the Bay Area's restrictive land-use policies, policies which naturally yield a forecast of little growth. By contrast, if one applies the cost-burden adjustment factor to present as well as hypothetical future households, the choice among comparator regions becomes literally ten times more consequential.

No doubt there are many reasonable ways in which the department could make the required cost-burden adjustment. But however the department does it, it should be responsive to **presently cost-burdened households**. Again, the thrust of SB 828 was folding current needs into the RHND itself.

Table 3.
Cost-Burden Adjustments: Total-Households Base

	Cost Burden (lower income, CHAS)	Cost Burden (lower income per ABAG)	Cost Burden (higher income, CHAS)	Cost Burden (higher income per ABAG)	Cost Burden (overall, CHAS)	Cost Burden (overall, ACS)	Rent
ABAG							
Rate	0.585	0.666	0.159	0.163	0.334	0.346	$2,042
ABAG Comparators							
Rate	0.601	0.66	0.114	0.131	0.313	0.302	$1,411
Difference	0.016	−0.006	−0.045	−0.032	−0.021	−0.044	
Adjustment (Units)	−19,785	8,026	79,114	55,746	64,640	132,817	
High-Growth Comparators							
Rate	0.562		0.086		0.286	0.276	$1,150
Difference	−0.024		−0.073		−0.048	−0.07	
Adjustment (Units)	29,625		128,968		145,525	212,347	
Whole-Nation Comparators							
Rate	0.523		0.074		0.268	0.253	$959
Difference	−0.063		−0.084		−0.066	−0.094	
Adjustment (Units)	78,583		148,792		199,017	283,331	

A straightforward way to implement SB 828 is to adjust the entire household base pro-rata, in proportion to the difference between the cost-burden rate in target and comparator regions. This is how HCD makes overcrowding, vacancy, and lost-to-demolition adjustments, and it's how we've constructed the tables below.[16]

More ambitiously, the department could undertake to estimate housing supply and demand, as the Legislative Analyst's Office has done, and to predict the amount of new construction that

[16] Some have questioned whether this approach might improperly "double count" certain households for purposes of the adjustments. Specifically, a household might be both overcrowded *and* cost-burdened, and if the overcrowding and cost-burden adjustments were both applied to the same "base" (i.e., the current-and-projected households number), these doubly burdened households would be adjusted for twice. We see nothing in the statute that rules this out, or even cuts against it. It's not as if each new housing unit added through the adjustments will be occupied by a presently cost-burdened or overcrowded household. State law doesn't reserve specific housing units for specific households, such that there could be "surplus" of unused homes in the event that a region allowed two more homes to be built on account of each household which is presently cost-burdened *and* overcrowded. Rather, the adjustment factors are just a rough-and-ready way of acknowledging the limitations of the population-forecast metric of need, and upwardly adjusting that number in proportion to stresses now being suffered by households in the region. A household is certainly more stressed if it's both cost-burdened and overcrowded, rather than just one or the other.

To be sure, the department enjoys considerable discretion in implementing SB 828, and if the department wanted to adopt a "no double-counting" rule of thumb, courts would probably uphold it. But if that is the department's choice, then it should use Census microdata to identify the portion of households that are both overcrowded and cost-burdened, and reduce the size of the adjustment proportionality, rather than making no allowance at all for the presently cost-burdened households.

would be needed to bring market prices down to more affordable levels in the cost-burdened areas Local governments in high cost-burden regions could also be required to remove minimum lot-size and unit-size controls, at least with respect to the "cost-burden adjustment" portion of the RHND, so that cost-burdened households have the option to purchase or rent housing services in smaller and thus more affordable packages. But however the department does it, the households whose cost-burdened status necessitates the adjustment must somehow factor into the equation.

REPLICATION OF HCD'S APPROACH: ADJUSTING THE "FORECASTED NEW HOUSEHOLDS" SUBSET OF THE "TOTAL HOUSEHOLDS" BASE

Table 2 replicates HCD's current methodology for making the cost-burden adjustment, while showing how the adjustment would change if the comparison regions or data sources were changed.

HCD's preferred methodology relies on a special tabulation of the American Community Survey, known as the Comprehensive Housing Affordability Strategy, or CHAS. This dataset enables one to estimate the number of cost-burdened households among quantiles of a county's population, where the quantiles are defined with reference to area-median income. HCD disaggregates the cost-burdened population into households whose income is below the 80th percentile of area-median income, and households whose income exceeds that threshold. The department then calculates the corresponding proportions of cost-burdened households for the comparator region (or an average of comparator regions), computes the difference between comparator and target region, and multiplies the difference by the target region's projected *growth* in households below and above median income.

To illustrate, if a target region projects household growth of 40,000 lower-income households and 60,000 moderate- and above-moderate-income households; if the target region's cost-burden rate for below-80th-percentile households is 75% and the comparator region's only 70%; and if the target region's cost-burden rate for above-80th-percentile households is 30% to the comparator region's 20%; then the total RHND adjustment would be (75% - 70%) * 40,000 units + (80% - 70%) * 60,000 units = 8,000 units.

Columns 2 and 4 of **Table 2** report ABAG's and HCD's corresponding calculations for the Bay Area, based on ABAG's preferred set of comparator jurisdictions. Columns 1 and 3 represent our attempt to replicate those calculations, using the 2012–2016 CHAS dataset. Our calculations came out a little differently, but the bottom line is very similar: essentially no adjustment to the lower-income RHND, and an upward bump of about 10,000 units to the moderate / above-moderate RHND.

The columns labeled "Cost Burden (overall)" show the adjustments that would have been made if HCD had used the overall rates of cost burden from the ACS or CHAS, rather than cost-burden

disaggregated by relative-income bands. The ACS data cover a slightly more recent time period (2013–2018) than the CHAS data (2012–2016), and yield a modestly larger adjustment.[17]

The high-growth and whole-nation comparator regions have substantially lower cost-burden rates, particularly for moderate- and above-moderate-income households (a difference of 7-8 percentage points). That's no surprise: in a healthy housing market, middle-income families are very well served. However, as the table shows, this substantial difference in cost-burden rates yields only a modest increment to the RHND (about 10,000 more units) when the adjustment is applied only to projected new households.

ADJUSTING THE "TOTAL HOUSEHOLDS" BASE

Table 3 is the same as the previous one but we apply the cost-burden adjustments to the total-households base, not just the small portion of that number consisting of projected new households. This illustrates the adjustments that would have resulted if HCD had applied the cost-burden factor in **exactly the same way** as it applies the other adjustment factors.

The consequences are dramatic. Using the CHAS data and the most reasonable choice of comparator regions (the high-growth comparators), the cost-burden increment to ABAG's RHND would be 29,753 + 130,487 or about **160,000 units**, as opposed to the roughly 9000 unit adjustment reflected in the official RHND. If the slightly more current 2013-2018 ACS data were used instead, the adjustment would exceed 200,000 units.

Overcrowding

The department upwardly adjusted ABAG's housing target by 94,605 units based on the difference between the overcrowding rate in the ABAG region and the average overcrowding rate in ABAG's chosen comparator regions.

Table 4 replicates HCD's methodology for assessing overcrowding, and shows how the adjustment would vary if HCD had used the "high growth" or "whole nation" comparator set instead of ABAG's hand-picked comparators. It turns out that using the comparator set most consistent with the policy of SB 828 — the high demand, high growth metro regions — generates only a very slightly larger adjustment. However, we find that the overcrowding rate in ABAG's chosen comparator regions is actually somewhat lower than the rate reported in HCD's official

[17] This is consistent with the upward trajectory in Bay Area rents during the last decade, which counsels in favor of using the most recent available data.

Table 4.
Overcrowding Adjustments

	Overcrowding Rate (ACS)	Overcrowding Rate (ABAG Calc.)
ABAG		
Rate	0.067	0.067
ABAG Comparators		
Rate	0.03	0.036
Difference	−0.037	0.031
Adjustment (Units)	113,363	94,605
High-Growth Comparators		
Rate	0.029	
Difference	−0.038	
Adjustment (Units)	116,235	
Whole-Nation Comparators		
Rate	0.025	
Difference	−0.042	
Adjustment (Units)	127,479	

Notes: Overcrowding rates were calculcated using 2014-2018 ACS data for combined statistical areas (comparators) and counties (Bay Area), the same data source that ABAG and HCD used. CSAs within the comparison groups are equally weighted.

table explaining the RHND. Correcting this apparent error would increase ABAG's housing target by **18,758 housing units**. Using the high-demand, high-growth comparators would increase it by **21,630 units**.

Vacancy

HCD is required by law to adjust the baseline, population-forecast RHND to account for the difference between the current vacancy rate and the rate appropriate "for healthy housing market functioning and regional mobility." Gov't Code 65584.01(b)(1)(E). The statute further instructs that "[t]he vacancy rate for a healthy rental housing market shall be considered no less than 5 percent." *Id*.

The department implements this statutory provision by presuming that 5% is a healthy rate, and by defining vacancy fairly narrowly so as to include only for-rent and for-sale housing units.

Vacation homes, seasonal housing for farmworkers, and "other" vacant units are excluded. This methodology resulted in an upward adjustment of 98,799 units.

Our replication of HCD's analysis yielded the same vacancy rates and adjustment. We also considered alternative measures of vacancy, and adjustments based on the difference between ABAG's vacancy rate and the rate in comparator jurisdictions, rather than the difference between the ABAG rate and 5%. Some of these extensions resulted in somewhat larger adjustments; others in somewhat smaller adjustments. The interested reader may generate the associated table by running the code in the R Markdown file associated with this report, but we have not included it because HCD's methodology seems defensible under the statute as written and the alternative adjustments don't make much difference.

Conclusion

The statutory criteria by which California undertakes to determine "regional housing need" leave much to be desired. Yet this report has shown that the state's new housing target for the Bay Area — which housing advocates say grossly underestimates the region's true need — is not just an artifact of a poorly thought-out statute. Rather, it reflects the Department of Housing and Community Development's omission of the statutorily mandated adjustment for "jobs-housing imbalance"; the Department's acceptance of the Association of Bay Area Governments' choice of similarly supply-constrained comparator regions; and the Department's decision not to provide for presently cost-burdened households.

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