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The Effectiveness of Regional Housing Policy: Evidence from the San Francisco Bay Area



WP 2015-1

Summary

In this working paper, we evaluate the effectiveness of the Regional Housing Needs Allocation (RHNA) in addressing affordable housing shortages in the Bay Area during the third housing element cycle, 1999-2006. Specifically, we asked 1) how successfully did the Association of Bay Area Governments (ABAG) concentrate affordable housing in areas in need of improved jobs-housing balances; 2) how effective have cities operating under California affordable housing policy been in placing affordable housing development in areas with low job accessibility? We find that ABAG, the authority tasked with distributing RHNA for the Bay Area, successfully distributed new affordable housing units in jurisdictions with greater jobs-housing imbalances when compared to the distribution of market rate production in the same period. However, if we specifically examine imbalances between low-wage jobs and affordable housing, we find that the construction of affordable tended to concentrate in locales with systematically less need relative to market rate production. Among the Bay Area's three largest cities, we find that San Francisco and Oakland succeeded in placing affordable housing in neighborhoods with greater need for improved jobs-housing ratios, but San Jose did not. Only San Francisco succeeded in concentrating affordable housing affordable housing in eartransit.

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List of Tables

- 7 Table 1: Unit Objectives, Units Planned for and Units Built: 1999-2006
- 10 Table 2: KS Test Results for Differences in Jobs-Housing Distributions Between Affordable and Market Rate Production
- 14 Table 3: Census Tract Level Outcomes: Very Low and Low Income versus Market Rate Production*
- 18 Table 4: Low and Very Low Permit Reporting Versus Confirmed Built for Twenty Largest Cities

List of Figures

- 9 Figure 1: Jurisdictional Jobs-Housing Balance of Quantified Objects and Affordable Permits Issud Relative to Market Rate Production9
- 10 Figure 2: Jurisdictional Jobs Housing Balance of New Units 1999-2006— Very Low and Low Income Units Only
- 12 Figure 3: Difference in Jobs Housing Balance Measures By City and Affordable Construction
- 13 Figure 4: Jurisidictional Low Wage Jobs- Affordable Housing Balance of New Units Built 1999-2006—Very Low and Low Income Units Only
- 15 Figure 5: Map of Affordable Housing And Low Wage Jobs-Housing Balance in San Francisco and Oakland
- 16 Figure 6: Map of Affordable Housing And Low Wage Jobs-Housing Balance in the South Bay

List of Equations

- 4 Equation 1: ABAG RHNA Allocation Formula Pre-2000; where i is a jurisdiction, j is its respective county, HHGrowth is projected household growth and JobGrowth is projected job growth
- 4 Equation 2: ABAG RHNA Allocation Formula Corrected For Jobs-Housing Balances

INTRODUCTION

Over the last twenty years, California cities have criticized the Regional Housing Needs Allocation (RHNA) process as being unfair, undemocratic, resource consuming. Despite the fact that the RHNA promotes infill development and sustainability, cities have recently begun to criticize the processes as inconsistent with smart growth goals (e.g., see Attachments to City Council Agenda Nov 2012, 2012).¹ Proponents of the process argue that it creates the possibility of affordable housing in communities that might not otherwise produce it and prevents cities from engaging in restrictive zoning practices that hinder sustainable development (Rein, 2011).

The RHNA Process

The Department of Finance, in consultation with the Department of Housing and Community Development, begins the RHNA process with an estimate of housing need based on population that is then converted to households. The Councils of Governments (COGs) develop regional projections, which incorporate a larger suite of economic and housing indicators and are fiscally constrained. The State works in consultation with the COGs to develop a final housing need. That is to say that final housing need is a determination made by the state but informed by both population and regional assessments. The COGs allocate the designated future needed housing amongst their jurisdictions. Localities must plan for these needed units in the state-mandated housing element sections of their general plans. The housing allocations are divided into income categories ranging from very low income households (making less than 50% of area median income) to above moderate income households (making more than 120% of area median income). At the end of allocation process, each jurisdiction has the projected number of new units in each income category that they are expected to provide space for by the end of the six year cycle. This is not the same as having to actually build for all those units. Instead, the cities work with the state at another time during their housing element processes to identify a set of "quantifiable objectives" for affordable housing production that can be reasonably achieved given budgetary and other constraints. Meeting these goals, which tend to be much lower than the real RHNA, is voluntary. In short, the RHNA represents a legally enforceable planning goal while the quantifiable objectives represents a voluntary production target.

The RHNA is the process by which specific sites for affordable housing are identified within local jurisdictions. Each local government then codifies its affordable housing in the Housing Element of the General Plan. These affordable housing goals are referred to as the quantified objectives, which signal the most that city's believe they can do given available programs and resource constraints. When updating their housing elements for a new housing cycle, jurisdictions must report their accomplishments in meeting these goals from their previous housing elements. Jurisdictions must also provide annual progress reports every April 1st that identify how they are meeting the RHNA goals. For this, most cities rely on information from their permitting departments and successor redevelopment agencies to provide accurate counts. The RHNA is designed to ensure that communities plan for all housing, not just affordable housing, and progress is measured by the number of units for which planning permits have been issued. This does not excuse cities, however, from providing adequate sites for all potential population growth identified by the RHNA. For the purposes of our paper, we focus only on the progress in constructing affordable housing. Cities are not required to report on the actual construction of new affordable housing, but there is very little drop-off between permits issued and construction undertake (C. Creswell, personal communication, March 30, 2015). This paper provides one of the first analysis of how many of those "permitted for" units are actually constructed.

1 Pages 7-8 contains a letter by the mayors of cities on the western side of Silicon Valley arguing that meeting their fair share housing allocation (RHNA) would, for example, result in higher greenhouse gas emissions.

RHNA: ABAG's 3rd Cycle Approach

Our analysis focuses on affordable housing construction outcomes for the third RHNA cycle in the San Francisco Bay. We compare these outcomes against the Association of Bay Area Government's (ABAG) goal of reducing jobs-housing imbalances. Jobs-housing imbalances significantly contribute to excess commuting and higher vehicle miles traveled (Balauce, Cervero, & Duncan, 2004; Ma & Banister, 2006), which disproportionately affects low income households (Roberto, 2008). The third cycle is ideal for exploring the potential of the RHNA because it is the most recent cycle (1999 to 2006) not impacted by the 2008 housing market crash and subsequent recession.

The state goals for the RHNA are to ensure that jurisdictions "plan to meet the existing and projected housing needs of all economic segments of the community,"² promote infill development, encourage energy efficient development and promote sustainability (CAL. GOV. CODE 65584.04.d, 2015). For the third RHNA cycle, ABAG approached its allocations as an opportunity to reduce vehicle miles traveled (VMT) and improve quality of life by focusing on future anticipated jobs-housing imbalances. In short, ABAG's intent was to achieve RHNA affordable housing planning goals using a smart growth performance measure. In this section, we walk through how ABAG altered its traditional allocation process to optimize on jobs-housing balance.

In its RHNA process, ABAG first divides its regional allocation to each of nine counties based on their anticipated population growth. ABAG then apportioned each jurisdiction's RHNA based on its projected share of its respective county's future housing and job growth. For example, a city in Contra Costa County that was expected to contain 50% of the county's projected job growth and 50% of the county's projected household growth would receive 50% of the county's RHNA allocations. However, job growth and household growth projections are rarely the same for jurisdictions.

Prior to the third cycle, ABAG weighted housing and job projections as 0.90 and 0.10, respectively. That is, 90% of a city's allocation was based on its shared of projected household growth and 10% was based on its share of projected job growth (eq. 1). This weighting scheme heavily prioritized allocations towards areas with anticipated household growth.

$$Allocation_{i} = (.9)* \frac{HHGrowth_{i}}{HHGrowth_{j}} + (.1)* \frac{JobGrowth_{i}}{JobGrowth_{j}}$$

Equation 1: ABAG RHNA Allocation Formula Pre-2000; where i is a jurisdiction, j is its respective county, HHGrowth is projected household growth and JobGrowth is projected job growth

During ABAG's housing sub-committee deliberations on third cycle RHNA allocations, ABAG staff criticized this weighting scheme as "opposite to many of ABAG's goals and policies regarding smart growth" (Amoroso & Smith, 2000). For the third cycle, ABAG transformed the weighting scheme to equally weight anticipated job growth and household growth (eq 2), a decision which ABAG argued was consistent with the values of Bay Area communities.

² http://www.hcd.ca.gov/hpd/hrc/plan/he/

Allocation $_{i} = (.5)* \frac{HHGrowth_{i}}{HHGrowth_{i}} + (.5)* \frac{JobGrowth_{i}}{JobGrowth_{i}}$

Equation 2: ABAG RHNA Allocation Formula Corrected For Jobs-Housing Balances

According to ABAG staff, this change shifted allocations away from the North Bay and distant East Bay suburbs toward the South Bay and Peninsula areas—Silicon Valley and San José (Amoroso, 2000). San Francisco and San José proper both saw the largest increases in allocations as a result of this shift. In many cases, ABAG further manually adjusted jurisdictions' allocations to address the impact of cities on their non-urbanized surrounding areas. They also "rewarded" cities that were successful in meeting their previous cycle allocations, by reducing their RHNA requirements for the third cycle. ABAG's deliberate attempt to shift allocations in order to improve jobs-housing balance affords us the opportunity to not only examine the actual construction trends of affordable housing, but also investigate the potential for RHNA to contribute towards MPO smart growth planning.

ANALYSIS OBJECTIVE

To examine the effectiveness of the RHNA in steering affordable housing construction, we ask whether affordable units built during the third RHNA cycle in ABAG jurisdictions are located in areas with systematically higher jobs-housing imbalances than market rate units produced in the same period. If they are in areas with higher imbalances, then ABAG succeeded in using the RHNA to place new affordable construction in places with the greatest need as defined by a jobs-housing measure.

DATA SOURCES AND METHODS

Evaluating the effectiveness of the RHNA in achieving these regional planning objectives requires three sets of data: affordable housing production, market rate production and jobs housing balance records at the jurisdictional scale. Constructing a database of affordable housing produced in the region requires careful consideration; California's Department of Housing and Community Development (HCD) does not maintain a standardized database of affordable housing across funding sources as many other state housing departments do (Bratt & Vladeck, 2014). For this reason, it is very difficult to create a completely accurate database for California. The database constructed for this paper should viewed as dynamic. It is – to the best of our knowledge - representative of jurisdictions' knowledge of their own affordable construction accomplishments vis a vis the state's housing element and RHNA laws. It is designed to be both a snapshot of dramatic differences in reporting practices between cities, and a repository of existing state and local knowledge about affordable housing production.

The database construction began with a review of the jurisdictions' annual reports to HCD between 2005 and 2013, from which we compiled RHNA permit counts by jurisdiction. Annual reports from many jurisdictions were not available from HCD. We filled in these gaps with data provided by ABAG (Adams, Cravens, Fassinger, Riviere, & Strunin, 2007). Using these presumed permits issued as benchmarks, we conducted five steps to build an affordable housing construction database, with the goal of identifying all units actually built in the third RHNA cycle. This "ground-truthing" took well over a year. Each of our analysis steps are described below.

Step One: Housing Elements

We gathered information on actual construction directly from Housing Elements for jurisdictions whose elements contained detailed unit production information. Some jurisdictions listed project names, addresses and number of units by affordability level. Others provided just project names or project names with overall unit counts. For the latter, we searched using project names, and often found contact information that we used to contact staff on location and confirm both the affordability criteria and housing locations. Several projects' names changed, and we found corrected names and project information through local and neighborhood news coverage of the projects' planning processes or construction. Some cities passively mentioned projects names' and number of affordable units when explaining their accomplishments in meeting very specific housing element goals, like providing affordable housing for the elderly or the disabled. Finding these developments requires careful reading of Housing Element accomplishment sections.

Step Two: AB 987 Databases

We also pulled information from jurisdictions' AB 987 databases of existing affordable housing built during the third cycle (1999-2006). These are state-mandated databases which provide similar information for all projects built with redevelopment money: year built, number of units by affordability level, site name, site address and contact information. While these databases could have provided us with nearly all the information we needed, we could not find many jurisdictions' databases online despite such availability being required by the law. ³

Step Three: HCD Redevelopment Records

We reviewed HCD annul reports on redevelopment corporation construction during the period and integrated these results into our database.⁴ This only provided new information for us regarding jurisdictions that did not provide AB 987 databases online, including project names, affordability level of units and year built.

Step Four: Local and Municipal Planning Documents

Many jurisdictions' Housing Elements or other planning documents mentioned producing affordable housing through inclusionary units, but failed to provide information on their locations. We searched planning commission and city council records for agreements with developers that specified the addresses of projects' affordable on-side units. These records contained detailed maps of new subdivisions or projects, but never specified the exact locations for the affordable units within these new communities. For these cases, we identified an address near the middle of the developments and applied it to those inclusionary units in our dataset for geocoding purposes.

Step Five: Validating the Dataset with Tax Credit Allocation Committee Records

We cross checked our database with the database of affordable projects funded through the California Tax Credit Allocation Committee (TCAC), which oversees Low Income Housing Tax Credit (LIHTC) and state tax credit allocations for affordable housing financing. We associated records in both databases using a fuzzy matching logic based on project names and addresses. We found 75% of new construction funded by TCAC already in

³ Various cities include copies of the legislation on their websites. For example, one can find the bill here: http:// www.cityofgoleta.org/index.aspx?page=978

⁴ Former redevelopment agency records are available in their entirety at http://www.hcd.ca.gov/rda/.

our database. The remaining 25% of TCAC funded new construction that was not already in our database came mostly from jurisdictions whose housing elements did not mention specific projects. However, about a dozen projects missing from our database were located in cities with detailed housing elements, so we re-examined the elements to identify any mention of the projects. These projects were listed in tables as "existing affordable stock" and not as third cycle accomplishments even though they were permitted and completed during the third cycle, with no reasons given for these reporting differences.

Market Rate Data

To estimate jurisdictional-level market rate production, we assembled data on recently built housing units from the 2007-2009 three year wave of the American Community Survey (ACS).⁵ This dataset provides estimates of units produced in periods of time that most closely match the 1999-2006 third RHNA cycle. This dataset did not provide estimates for very small jurisdictions, and production for those communities came from the 2006-2010 five year wave of the ACS, but only included units built from 2000 to 2004.⁶ For tract level market rate production, we rely on the 2006-2010 five year wave of the ACS, which only enabled us to use production estimates covering 2000 to 2004. Our interest was in producing consistent reporting sources across the geographic scales we were focused on; consequently, we selected the ACS for use over Department of Finance reporting.

Jobs-Housing Balance and Transit Accessibility

The jobs-housing balances for each jurisdiction were based on the UC Davis' Regional Opportunity Index (ROI). ⁷ Because the ROI did not contain total jobs-housing balances at the census tract level, we constructed these variables separately using the same Census dataset used to build the ROI: the Longitudinal Employer-Households Dynamics dataset (LEHD). This dataset provides block level counts of resident workers (where they live) as well as counts of workers' workplace sites (where they work). For each tract, we calculated the jobs housing balance as the ratio between the numbers of households' primary workers' worksites within a 2.5 mile radius of the tract over the number of households' primary workers homes within 2.5 mile radius of the tract. In the LEHD, primary workers refers to a household's primary income earner. We used primary jobs only to avoid households with multiple workers being double counted.

The ROI also contains data on the balance between low-wage jobs and housing units affordable to lowwage workers at both the jurisdictional and tract scale. The ROI counts low wage jobs as those making less than \$1250 a month, roughly 30 cents more than the minimum wage for a full time worker living in the Bay Area during the third RHNA cycle. Units affordable to low wage workers are those with rents under \$750 a month. While \$750 is an extremely low rent in the Bay Area today, in the 2000 Long Form Census roughly half of bay area renters paid gross rents at or below \$750 a month, making this measure appropriate for the period of analysis studied here. ⁸

5 Specifically, this table: ACS_07_3YR_DP3YR4.

6 The ACS bins housing units' ages in five and ten year increments. We used the 2000-2004 bin for smaller jurisdictions because it most closely approximated the RHNA cycle. We found a .8 correlation between these estimates and combined estimates for 2000-2010, which included years from the 4th RHNA cycle. Given the strong correlation and the need to keep estimates limited to the third cycle, we opted to use estimates from 2000 to 2004. 7 The full dataset is publicly available at http://interact.regionalchange.ucdavis.edu/roi/data.html.

8 We calculated this using the 5% sample of the 2000 Public Use Microdata Samples (PUMS) full files. PUMS weights were not applied. Information on this dataset can be found here: https://www.census.gov/main/www/pums.html

To measure transit and amenity accessibility we selected the combined mode share transit, bicycling and walking at the Census Tract level from the 2006-2010 American Community Survey. We explored alternative measures including transit headways and jobs accessible by a 45 minute transit commute but settled on census tract measure two reasons. First, it captures both the utility of taking transit and immediate accessibility to employment (walk mode share). Second, it is reliably consistent across all jurisdictions and is available at the same scale as the other variables in this analysis.⁹

Benchmarking

There were a number of reporting issues, which we elaborate on in Appendix A that reduced our confidence in jurisdictional self-reporting as well as ABAG's calculations of permitting goals. As a result, we used ABAG's "A Place to Call Home" report to benchmark both ABAG's permitting goals for jurisdictions and the jurisdictions' success in issuing permits (Adams et al., 2007). This report lays out permitting goals for the region; these permitting goals will not match the overall regional allocation the state provided ABAG. In clarifying this discrepancy, we found that the deployed RHNA allocations are usually revised downward as a result of state-region consultation into new counts that are represented in the "quantified objectives" that each jurisdiction reports in their Housing Element and the counts that are contained in the ABAG report, although they are sometimes mislabeled as the "RHNA Goals." The ABAG report offers the best benchmarks because it is the most complete source available—covering all jurisdictions and coming from the agency which administered jurisdictions' quantified objectives under RHNA.¹⁰ More importantly, it represents permitting counts taken immediately following the third cycle: a snap shot of jurisdictions' intent to build via their successful planning, re-zoning and permitting for new affordable housing. The discrepancy between jurisdictional intent to build documented in this source and actual construction outcomes is a central concern of this paper. In the following sections, all data regarding jurisdictions' housing goals and permitting achievements come from ABAG's "A Place to Call Home" (Adams et al., 2007).

HOW DID THE RHNA PROCESS WORK IN THE BAY AREA?

Permits and Construction by Income Category

As noted earlier, ABAG jurisdictions set quantified objectives for the region to permit for over 133,000 affordable units. From 1999 to 2006, ABAG jurisdictions successfully permitted 62,296 affordable units or just 47% of their goals (Table 1). We successfully mapped roughly two-thirds, or 41,955 of those units that were planned for. We reiterate that these are almost certainly under-estimates. It is rare that housing is not built when the permits have been issued; we can identify only about 3,000 permits issued that we know conclusively did not become units—mostly through press coverage of local controversies over some planned projects.

⁹ We also found in auxiliary analysis that all three measures were significantly correlated enough to give us confidence in selecting this measure for its universal availability over these theoretically superior but less widely available alternatives.

¹⁰ In Appendix A we document missing jurisdiction reports to HCD and records contained in Housing Elements, making those potential sources less than ideal for benchmarking.

Income Category RNHA		Succesfully Planned For		Confirmed Built	
		Number	Pct	Number	Pct
Very Low	47,128	20,595	44%	18,953	40%
Low	25,085	18,918	75%	15,482	62%
Moderate	60,982	22,783	37%	7,520	12%
Total	133,195	62,296	47%	41,955	31%

Table 1: Unit Objectives, Units Planned for and Units Built: 1999-2006

Many of the housing elements for individual cities did not provide income category breakdowns for units in projects. We estimated the income categories for many of these units using redevelopment records; we could not confirm income categories for roughly 15% of our dataset. Therefore, the values reported are Table 2 are likely to be under-reported by a small amount. Additionally, for the 26 new construction projects (representing 3% of overall units) that we first identified through the TCAC, but could not find in any housing elements, we divided each of those project's units evenly into the very low and low income categories.

The Bay Area failed to meet any of its targets, but particularly fell short in producing units in the "moderate income" category relative to both its moderate income goals and compared to its achievement rates for other incomes. Most of the moderate income units built came from on-site inclusionary housing production, particularly for large condominium projects or major suburban subdivision development. As records for on-site inclusionary units were some of the hardest to track down and map, the moderate income category may also be the most under-counted in this dataset. In contrast, because very low income and low income units were also more likely to also be built using federal funding through programs like the Low Income Housing Tax Credit (LIHTC), data on locations were easier to identify and confirm through TCAC. We also note that unit types also varied significantly by income category. A disproportionate share of town homes and attached units fell into the moderate income category in the dataset, whereas very low and low income units were more likely to be apartments. Based on comparisons to Census data, we roughly estimate that the 41,955 units we have confirmed were constructed constitute over 23% of the total housing stock built in the San Francisco Bay Area using 2000-2004 Census estimates, and just under 19% of total stock built using 2000-2010 estimates. These results compare very well to other states which have also struggled to ensure that at least 10% of new housing stock are guaranteed affordable (Bratt & Vladeck, 2014). We speculate that two influences may have contributed to the higher proportion of affordable housing found in the Bay Area: 1) the Bay Area's commitment to affordable housing and 2) California's more extensive housing element laws.

Meeting Jobs-Housing Balance Goals: Planning

We first examined if affordable units were built in systematically better locations (from a jobs-housing balance perspective) than market rate units using jurisdictional level jobs-housing balance data. As noted earlier, the jurisdiction is the level at which ABAG assign RHNA allocations. First we examine how ABAG's Quantified Objectives (goals) compare with market rate production in terms of jobs housing balance (green bars in Figure 1).

ABAG disproportionately allocated more units into jurisdictions with jobs-housing imbalances over 1.5 relative to market rate production by a six percentage point difference. ABAG's reformulation of RHNA distribution succeeded in setting up the region to plan for more housing in places with greater jobs-housing imbalances.





In meeting these goals through permitting for affordable housing, the region succeeded in allocating more affordable permits in those high imbalance cities relative to market rate production by four percentage points. The two percentage point drop in these cities from unit goals to units actually planned for raises the question: is it harder to plan for affordable housing in cities with higher imbalances, or is this a function of this particular period of time? Figure 1 also demonstrates, however, that cities with extremely low imbalances (under .5) slightly outperformed other cities in permitting relative to their goals.

Meeting Jobs-Housing Balance Goals: Construction

Affordable housing construction does appear to be concentrated in communities with systematically greater need for more housing relative to market rate production (Figure 2). If we compare the share of affordable housing to market rate housing, we find that 30% of affordable units were built in jurisdictions with jobshousing balances over 1.5, compared to just 21% of market-rate units. Overall, these data suggest ABAG has

been reasonably successful in utilizing the RHNA to achieve smart growth goals.



Figure 2: Jurisdictional Jobs Housing Balance of New Units 1999-2006—Very Low and Low Income Units Only

We can also evaluate the statistical significance of the differences in market versus affordable housing provision using a differences in means and tests for differences in the distribution of the jobs-housing balance variable for each set of newly constructed units. We find that new affordable units were built in jurisdictions with systematically better jobs-housing balances (on average: 1.19) compared to market rate units (on average: 1.13) with results significant at the .001 level. To test for differences in the distribution we use both the Mann-Whitney test and the two sided Kolmogorov-Smirnov (KS) test. Results also demonstrate that the distribution of the jobs-housing balance among affordable units is greater than it is among market rate units (Table 3).

Table 2: KS Test Results for Differences in Jobs-Housing Distributions Between Affordable and Market Rate Production

Tests for if the Jobs-Housing Balance for Affordable Units is Greater than Jobs-Housing Balance for Market Rate Units	P-Value
Two-Sided Kolmogorov Smirnov Test	0.00
Mann-Whitney (Wilcox Rank Sum Test)	0.00

Results of Affordable Production By Low Wage Jobs- Affordable Housing Balances

As noted in the data section, there is also a likely significant difference in the spatial distribution of:) the ratio of total jobs to housing balance (ABAG's approach), and the ratio of low wage jobs to affordable housing as measured in the ROI. The ROI's alternative measure correlate's with ABAG's measure by .62 across jurisdictions, suggesting significant enough difference to warrant exploring how the ROI's definition changes the picture of affordable housing construction in the region. Figure 3 shows the total jobs-housing balance of the Bay Area's twenty largest cities (ABAG's measure) plotted against their low wage jobs to affordable housing balances (ROI measure), with each city colored based on the percentage of its RHNA quantified objectives actually built.

Cities below the line are those jurisdictions whose total jobs-housing balances mask comparatively lower low-wage jobs to affordable housing imbalances. For example, high levels of construction in San Francisco indicates a success for attaining smart growth goals because the City has a comparatively high total jobs to housing balance (1.66). But given its comparatively lower low wage jobs to affordable housing balance (2.09), the City appears to have had better housing market conditions for low wage workers compared to places like Redwood City and Mountain View during this period. This may be due to rent control or stronger support in San Francisco proper for financing affordable housing.¹¹ Ten of the cities had affordable construction exceeding at least 50% of their quantified objects are also identified (green). Two of those high-achieving cities are above the correlation line, and have total jobs housing balances that give the appearance that they may not need affordable housing at all: Vacaville (.89) and San Mateo (1.06). But their low wage jobs to affordable unit ratios are dramatically higher and suggest they have some of the greatest need at 5.90 and 5.64 respectively.



Figure 3: Difference in Jobs Housing Balance Measures By City and Affordable Construction

11 It is worth re-iterating that this data is from 2010, and does not capture the recent meteoric rise in rents in San Francisco.

Our analysis suggest that RHNA should be used with a metric such as low wage jobs to affordable housing. That is, ABAG may have used the wrong metric in defining its goals and this limited the RHNA effectiveness. However, no jurisdiction in ABAG's counties had low wage job to affordable housing ratios below 1, meaning the placement of affordable housing anywhere in the region would help in improving local imbalances measured in this way. But the dramatic range of variation across jurisdictions—from 1.4 in cities like Oakland and Richmond to 21 in Pleasanton and 24.5 in Lafayette, demonstrates the need is much more extreme in the suburban bay area than in the urban cores. Figure 3 compares the distribution of new affordable and market rate construction using the low wage to affordable housing metric (ROI alternative). Affordable units built during this cycle are systematically concentrated in areas of lower low-wage jobs to affordable housing imbalances compared to market rate construction, directly opposite the results exhibited for total jobs-housing balances.



Low Wage Jobs- Affordable Unit Balance

Figure 4: Jurisdictional Low Wage Jobs- Affordable Housing Balance of New Units Built 1999-2006—Very Low and Low Income Units Only

These results should be interpreted with caution because the dataset of affordable housing production data is skewed towards cities with lower low-wage jobs to affordable housing balances, primarily because these cities have more robust reporting practices. The average jurisdiction in the Bay Area has a low-wage jobs to af-

fordable housing balance of roughly 7.0. The three jurisdictions with the most robust reporting procedures—including detailed building inventories—had much lower balances than this average: San Jose (4.0), San Francisco (2.1) and Oakland (1.4). These three cities represent 52% of the affordable stock in the dataset. Had reporting practices been more robust among large cities with higher low wage job to affordable housing balances (e.g., Livermore, Redwood City, and Santa Clara) then these results might be different. Consistent, detailed reporting standards across jurisdictions is essential for conducting future regional policy making and policy evaluation.

Jobs-Housing Balance and Transit Access at the Neighborhood Level

The results reported so far have not addressed any intra-jurisdictional variations in jobs-housing balances in the Bay Area's major cities. For example, San Jose's low wage jobs to affordable housing balance of 4.0 cannot be interpreted to mean that residents in all affordable units in San Jose face an environment with this exact balance, as San Jose is 180 square miles and stretches over twenty six miles from where it touches the bay to its border with Morgan Hill.¹² Evaluating these balances at the census tract level provides a clearer picture of the effectiveness of ABAG jurisdictions of using affordable housing to meet smart growth goals. Tract level analysis also enables comparisons of transit accessibility between affordable and market rate production during the cycle. We limit this analysis to the three largest jurisdictions with the most robust affordable housing reporting procedures: San Francisco, Oakland and San Jose (Table 4).

Variable	Jurisdiction	Affordable Construction	Market Rate	T-Test p-value
Total Jobs Housing Balance	San Jose	1.03	1.49	0
	San Francisco	2.47	2.36	0
	Oakland	1.49	1.38	0
Low Wage	San Jose	3.69	4.84	0
Jobs- Housing Balance	San Francisco	2.23	2.13	0
	Oakland	1.4	1.39	0.37
Transit	San Jose	8.40%	9.60%	0
Access	San Francisco	59.60%	52.10%	0
	Oakland	25%	31.20%	0

Table 3: Census Tract Level Outcomes: Very Low and Low Income versus Market Rate Production*

*Highlights indicate measures where affordable production outperformed market rate production

San Jose placed affordable housing in census tracts with systematically lower jobs-housing balances and transit usage compared to the placement of market rate construction. San Francisco and Oakland placed affordable units in areas with much greater jobs-housing imbalances compared to market rate production, but only San Francisco's affordable construction outperformed the market in terms of transit access. The concentrations of affordable housing production in Oakland and San Francisco are shown in Figure 4.

12 This was calculated manually using the "Measure Distance" function in Google Maps



Figure 5: Map of Affordable Housing And Low Wage Jobs-Housing Balance in San Francisco and Oakland

The significant concentration of affordable units in the Tenderloin, downtown San Francisco and SOMA (South of Market) drive the higher transit and employment accessibility of the affordable housing stock in San Francisco proper. And most of the new affordable housing outside that major cluster, particularly those in the south-east quarter of the city, tended to concentrate near Bay Area Rapid Transit (BART) stops or the city's own subway line (MUNI).

Among these three cities Oakland had the least internal variation in both jobs-housing balance measures. This explains why on both measures of jobs-housing balance, Oakland's new affordable and market rate stock had the least difference in means compared to other cities, as demonstrated in Table 4. Most of Oakland's communities with high imbalances are on its northwestern edges, more suburban "bedroom" communities with little affordable housing but plenty of low wage service work. These results contrast sharply with affordable housing placement in the San Jose and south bay communities presented in Figure Six.



Figure 6: Map of Affordable Housing And Low Wage Jobs-Housing Balance in the South Bay

Figure 6 challenges the assertion made by the mayors of cities on the western side of Silicon Valley that increased affordable housing could raise vehicle miles traveled, as the figure clearly demonstrates existing low wage jobs to affordable housing imbalances are higher on the western side of the valley.¹³ The large cluster of affordable housing units in the central and east areas of San Jose with significantly lower low wage jobs to affordable housing balances explain San Jose's lower performance on this measure.

Both maps illustrate a trend of low wage jobs to affordable housing imbalances being higher further away from major employment centers, a reflection of the suburbanization of low-wage employment (Weitz & Crawford, 2012; Wilson, 1987). Most of the neighborhoods of high imbalances are just outside of San Jose proper, in Cupertino, Campbell and Los Gatos to the west, and Morgan Hill to the south. This challenges the application of conventional wisdom about placing affordable housing near urban cores and major fixed route transit lines to reduce VMT and increase low resource households' employment accessibility.

¹³ See pages 7-8 for the cities' claims that meeting affordable housing goals in their communities would raise VMT. http://saratoga.granicus.com/MetaViewer.php?view_id=9&clip_id=768&meta_id=34872.

Discussion

That the San Francisco Bay Area built 31% of its quantified objectives—or had 57% of its claimed permits issued—is hard to judge as being a major failure. Using Census data we can estimate this construction represents roughly 19% of total housing production in the Bay Area from 2000 to 2010, a clear triumph for the region when compared to other regions whose affordable housing programs have struggled to meet 10% affordable housing construction goals (Bratt & Vladeck, 2014). We found the closure of military bases and re-allocation of other public land to affordable housing contributed significantly to this success, highlighting publicly owned land as critical to affordable housing development in a tight market such as the Bay Area.

Our results suggest that the RHNA can be successfully leveraged by MPOs to achieve the sustainability goals set forth by California's ambitious planning legislation, SB 375, which links regional housing and transportation planning. But questions around what facilitates such coordination and what hinders it remain, particularly as it pertains to funding and cost. As regional housing policy is utilized to shift the location of affordable housing to transit and jobs-rich areas, we need to pay more attention to how the per-unit subsidy of developing such housing varies across space within our urban areas—a still unresolved topic in housing literature (Wegmann, 2014). In addition, in pursuit of reducing vehicle miles traveled, are we concentrating affordable housing in places where it is more expensive to build?

While ABAG succeeded in meeting its goal of promoting affordable housing in areas with large jobshousing imbalances, we demonstrate this may not have been the appropriate goal. Our alternative measure for low wage households, however, is based off a definition of "low wage" that cannot be applied to future housing cycles in California due the state's recent increases in the minimum wage. In the future, regions should utilize a metric of jobs-housing balance that correlates positively with changes in the employment outcomes of new affordable housing residents. This measure should also define 'affordable' rents properly in the context of local rental market conditions using emerging "big data" sources on local rental conditions like Kwelia, Zillow, or Trulia.

Finally, we note that reporting by jurisdictions complicated our efforts. Changes to the Housing Element law which went into effect for the fourth and fifth cycles have largely resolved the issue of inconsistent reporting. But the state needs to continue to improve and standardize reporting procedures. The adequate sites inventories should have a standardized reporting system across all jurisdictions, and that identification should be applied across all funding sources. This would allow tracking of those sites listed in adequate sites inventories that attract funding for housing and enable identification of where the funding is derived from. This would facilitate a better understanding of which land use and policy strategies drive affordable housing production. Additionally, many units that are "affordable by design" through the removal of land use restrictions are not income-restricted. Local jurisdictions should track the incomes of occupants of these units to evaluate if this policy is serving those it is intended to help.

APPENDIX A: Issues with Reporting

As might be expected, the numbers of self-reported permits by jurisdiction varied over time. The HCD guidelines indicate that jurisdictions should only count units towards their RHNA that they can reasonably anticipate will be permitted by the end of the planning cycle.¹⁴ Table 1 presents the combined, self-reported very low

¹⁴ For details, see: http://www.hcd.ca.gov/hpd/housing_element2/HN_PHN_regional.php

and low income permitting outcomes by reporting documents over time for the twenty most populous jurisdictions in the region. The jurisdictions in Table 1 represent over 57% of the region's population. Their Quantified RHNA Objectives represent 66% of those allocated by ABAG to the Bay Area during this cycle.

Table 4: Low and Very Low Permit Reporting Versus Confirmed Built for Twenty Largest Cities	15 16 17
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City (2010 Population)	Quantified Objectives (Housing Element)	Permits Reported to ABAG (2007)	Permits Reported in Annual Update to HCD (2007)	Permits Reported in Housing Element Post-2009	Identified By Public Records and Confirmed on the Ground as Built
San Jose (945,942)	7701	8301 (107%)	9343 (121%)	8915 (116%)	8915 (116%)
San Francisco (805,235)	7370	5304 (72%)	4763 ¹⁵ (64%)	5455 (74%)	5455 (74%)
Oakland (390,724)	3207	1300 (41%)	1173 (37%)	1173 (37%)	1174 (37%)
Fremont (214,089)	1715	503 (29%)	503 (29%)	503 (29%)	375 (22%)
Santa Rosa (167,815)	2509	1929 (77%)	1929 (77%)	2179 (87%)	1266 (50%)
Hayward (14,186)	969	57 (9%)	151 (15%)	NA	194 (20%)
Sunnyvale (140,081)	1097	112 (10%)	NA	NA ¹⁶	230 (21%)
Santa Clara (116, 268)	1884	758 (40%)	NA	NA	613 (33%)
Vallejo (115,942)	1164	553 (48%)	NA	NA	511 (44%)
Berkeley (112,580)	504	496 (98%)	386 (77%)	390 (77%)	86 (17%)
Fairfield (105,321)	1334	249 (19%)	274 (21%)	NA	278 (21%)
Richmond (103,701)	744	1293 (174%)	NA	844 (113%)	830 (112%)
Daly City (101,123)	421	33(8%)	41 ¹⁷ (10%)	NA	11 (3%)
Antioch (102,372)	1430	838 (59%)	NA	50	109 (8%)

15 For details, see: http://www.hcd.ca.gov/hpd/housing_element2/HN_PHN_regional.php

16 Only includes units through 2005.

17 http://sunnyvale.ca.gov/Portals/0/Sunnyvale/CDD/Housing/Final%20Housing%20Element%20-%20Sunnyvale.pdf

San Mateo (97,207)	718	210 (29&)	NA	356 ¹⁸ (50%)	364 (51%)
Vacaville (92,428)	1489	778 (52%)	798 (54%)	426 (29%)	793 (53%)
San Leandro (84,850)	302	108 (36%)	NA	112 (37%)	201(67%)
Livermore (73,812)	1357	461 (34%)	307 (23%)	289 (21%)	249 (18%)
Napa (76,915)	1203	528 (44%)	NA	431 (36%)	486 (40%)
Redwood City (76,815)	790	106 (13%)	NA	124 (16%)	411 (52%)
Mountain View (74,066)	10029	123 (1%)	NA	123 (1%)	554 (6%)

As stated above: we received all HCD annual reports from 2005 to 2009, but found roughly half of ABAG's jurisdictions missing from this data source. The missing reports were either never sent or were misplaced, even though annual reporting is required by law. Self-reported permitting attainment fluctuates somewhat significantly across reporting documents. This raises questions around the validity of jurisdictions' permitting counts, or jurisdictions' ability to interpret what can "count" towards allocations. All three counts were taken after the end of the third cycle (two in 2007 and one in 2009), when jurisdictions should have been able to accurately gauge progress. Furthermore, these counts are not actual confirmed construction (except for the far right column, which we put together independently), so a unit successfully "planned for" in a count for ABAG in 2007 but built by 2009 when new housing elements were due should have been counted the same in both documents. More concerning is that during the same year, 2007, some jurisdictions provided one number of permit estimates to ABAG (column 3) and a different number of permit estimates to HCD (column 4). These jurisdictions include: San Jose, San Francisco, Oakland, Hayward, Berkeley, Fairfield, Daly City, Vacaville and Livermore. Permitting outcomes are used by MPOs and COGs in allocating permits in future RHNA cycles. Inaccurate counts mean distorted future RHNA allocations and distorted evaluations of our housing policies.

Several jurisdictions also revised estimates significantly downward for low income categories over time. In most of these cases, including San Jose and Richmond among large cities, aggregate permit counts remained the same or negligibly different from source to source—but counts for moderate and above moderate units went up while they went down for low and very low income categories. This gives the appearance of permit counts "shift-ing" upwards along income thresholds, perhaps due to complications in the planning process or the inability of affordable-sites to attract funds. We suspect this because in building our database we found multiple instances of units claimed towards affordable quantified objectives that were often halted post-reporting due to public opposition. We also found cases of planned affordable projects counted towards permitting goals that ended up selling as market rate units because the original affordable providers fell through. Because we have no records of how each

¹⁸ Only includes 2001-2006

jurisdiction went about producing these counts for ABAG and HCD, we unfortunately cannot investigate the exact causes of these discrepancies.

Richmond also raises another question, as over three hundred of its affordable units produced in the period were part of a HOPE IV redevelopment project focused on Richmond's Easter Hill public housing site. Yet according to HUD, the Easter Hill program included the replacement of 237 severely distressed units with 191 public housing units (FY 2000 HOPE IV Revitalization Grants, 2000).¹⁹ Is it appropriate for jurisdictions to count replacement units when they are fewer than the units they are replacing?

¹⁹ https://portal.hud.gov/hudportal/documents/huddoc?id=DOC_9901.pdf, page 4.

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