

2014-2022 Regional Housing Need Allocation (RHNA) Methodology Technical Documentation

The spreadsheet (*Final RHNA Methodology Model*) shows the steps for calculating a jurisdiction's 2014-2022 Regional Housing Need Allocation (RHNA) using the methodology adopted by the ABAG Executive Board on July 19, 2012.

It includes several tabs that display the components of the RHNA methodology by jurisdiction. The tabs (shown at the bottom of the screen) include:

- SCS Input: data from the *Jobs-Housing Connection Strategy (SCS)*
- Fair Share Factors and Scoring:
 - Past RHNA Performance
 - Employment
 - Transit
 - Scoring Summary: adjustments based on the Fair Share Factors
- RHNA Model: each step of the RHNA methodology, including the Sustainability Component and Fair Share Component
- Income Distribution: the income allocation by jurisdiction
- Draft Summary: the Draft RHNA numbers by jurisdiction compared to previous RHNA cycles
- Draft RHNA: the Draft RHNA numbers by jurisdiction
- Final RHNA: the Final RHNA numbers by jurisdiction

All of these topics are described in more detail below.

A. Data From the *Jobs-Housing Connection Strategy* (“SCS Input” tab)

This table shows the total amount of housing unit growth for 2014-2022, based on the forecast from the *Jobs-Housing Connection Strategy (SCS)*, adopted by ABAG and MTC on July 19, 2012. The SCS includes housing unit totals for 2010 and 2040, as well as for the interim years of 2015, 2020, 2025, 2030, and 2035, plus the RHNA years of 2014 and 2022. The results are summed by jurisdiction and grouped into Priority Development Area (PDA) and non-PDA totals.

Figures have been adjusted based on the jurisdiction's Sphere of Influence (SOI) and the county-specific SOI rules of the RHNA methodology. These rules are:

1. In Napa, San Mateo, Santa Clara, Solano, and Sonoma counties, the allocation of housing need generated by the unincorporated SOI was assigned to the cities.
2. In Alameda and Contra Costa counties, the allocation of housing need generated by the unincorporated SOI was assigned to the county.
3. In Marin County, 62.5% of the allocation of housing need generated by the unincorporated SOI was assigned to the city and 37.5% was assigned to the county.

B. Fair Share Factors and Scoring

The RHNA Methodology includes three “Fair Share” factors: past RHNA performance (affordable units), total 2010 employment outside of PDAs, and transit coverage and frequency. The methodology for scoring each of these factors is described in detail below:

a. Factor: Past RHNA Performance (“Past RHNA Performance” tab)

This factor evaluates a jurisdiction’s performance in issuing permits to meet its RHNA allocations for very low- and low-income units for the 1999-2006 RHNA period. The scores were calculated using information in ABAG’s report *A Place to Call Home: Housing in the San Francisco Bay Area* (August 2007).

The factor is based on the total number of very low- and low-income units permitted. Each jurisdiction’s permit data for the two income categories is shown on the “RHNA Performance” tab (Columns B – H). Columns J – K show the combined totals for the two income categories. Each jurisdiction in the region is ranked from 1 to 109 based on the total number of permits issued for very low- and low-income units from 1999-2006 (Column L). The jurisdiction’s rank for the factor is then normalized to a scale of -100% to 100% (Column M). The Score Adjustment moves a jurisdiction’s allocation up or down by modifying its Non-PDA Growth Total. Those jurisdictions that have permitted less of their past RHNA numbers will receive a higher RHNA allocation for this period.

b. Factor: 2010 Employment (“Jobs” tab)

The employment factor is based on National Establishment Time Series (NETS) data for 2010. The NETS data is gathered by individual business and includes number of jobs, industry type, and location. This data was used instead of Census data because it is location-specific, which allows for calculation of the number of jobs within PDAs and the number outside of PDAs.

The data for each jurisdiction is shown on the “Jobs” tab. Columns B – D show the employment data for each jurisdiction, separated into jobs located within PDAs and jobs located outside PDAs. Each jurisdiction in the region is ranked from 1 to 109 based on the total number of non-PDA jobs (Column F). The jurisdiction’s rank for the factor is then normalized to a scale of -100% to 100% (Column G). The Score Adjustment moves a jurisdiction’s allocation up or down by modifying its Non-PDA Growth Total. Those jurisdictions that have a higher number of jobs outside of PDAs will receive a higher RHNA allocation.

c. Factor: Transit (“Transit” tab)

The transit factor is based on measures of service frequency and overall coverage for an entire jurisdiction. Service frequency is measured by average daily headways (time in minutes between transit arrivals over a 24-hour weekday period) in 2009 by jurisdiction. The data is from the Metropolitan Transportation Commission. The calculation is done at the intersection-level based

on how frequently a transit vehicle arrives at that location; therefore, the average headway only takes into account intersections within a jurisdiction that have transit stops.

Transit coverage is measured by the percent of intersections within a jurisdiction that have transit stops. This information helps avoid overstating the overall availability of transit jurisdiction-wide based on the fact that some jurisdictions have a small number of stops, but happen to have frequent transit.

The data for each jurisdiction is shown on the “Transit” tab. Frequency calculations are shown in [Columns B – D](#). Column B shows the total number of transit arrivals within a jurisdiction in a 24-hour period. Column C shows the average stops per hour, while Column D converts this average into an average headway for the 24-hour period. The jurisdiction’s score is normalized to a scale of -100% to 100% ([Column E](#)).

Coverage calculations are shown in [Columns G – J](#). Column G shows the total number of intersections within the jurisdiction that have transit stops. Column H shows the total number of intersections within the jurisdiction, and Column I shows the percent of intersections with transit. The jurisdiction’s score is normalized to a scale of -100% to 100% ([Column J](#)).

The Score Adjustments for frequency and coverage are averaged to create a composite transit score ([Column L](#)). Each element is weighted equally. This Score Adjustment moves a jurisdiction’s allocation up or down by modifying its Non-PDA Growth Total. Those jurisdictions that have better transit service and coverage will receive a higher RHNA allocation. The score was normalized to fit the range of 1 to -1 in [Column M](#).

Jurisdictions’ transit scores were not ranked from 1 to 109 because the impact of “outlier” jurisdictions on the adjustments was not particularly significant.

d. Scoring Summary for Three Factors (“Scoring Summary” tab)

Each jurisdiction’s results and Score Adjustments for each Fair Share Factor are shown on the “Scoring Summary” tab of the spreadsheet. [Column C](#) shows the total number of very low- and low-income units the jurisdiction permitted during the 1999-2006 RHNA period. [Column D](#) shows the jurisdiction’s “Score Adjustment” based on this factor. [Column F](#) shows the jurisdiction’s total employment outside of PDAs. [Column G](#) shows the jurisdiction’s “Score Adjustment” based on this factor. [Column I](#) shows the jurisdiction’s transit frequency score. [Column J](#) shows the jurisdiction’s transit coverage score. [Column K](#) shows the jurisdiction’s combined Score Adjustment based on its transit coverage and frequency.

Each of the three Fair Share Factors is given equal weight—in this case 33% for each (highlighted in red in [Columns M – O](#)). The Score Adjustment for each factor (from [Columns C – K](#)) is multiplied by the weight, and the results for each weighted factor are shown in [Columns M – O](#). These weighted Adjustment Factors are what gets applied to the Adjusted Non-PDA Growth Total in the RHNA Model tab.

C. Sustainability Component (“RHNA Model” tab)

This table shows the steps of the RHNA methodology.

Step 1: The Sustainability Split – Blue Heading (columns D – G)

To determine the Sustainability Split, the regional housing need determination received from HCD (187,990) is multiplied by 70%. This results in a Sustainability Split of 131,593. This step directs most of the housing need to jurisdictions with PDAs, consistent with the sustainability principles of the *Jobs-Housing Connection Strategy*.

PDA Growth

Each jurisdiction that has a PDA is assigned a portion of the Sustainability Split, based on its PDAs’ share of the region’s total PDA growth. This is calculated using the following steps:

- Sum the growth in each of a jurisdiction’s PDAs to determine the jurisdiction’s PDA Growth Total. The PDA total for each jurisdiction is shown in the “in PDAs” column on the SCS Input tab.
- Divide this total by the total amount of PDA growth in the region (131,593) to determine the jurisdiction’s Share of PDA Growth (Column D)
- Multiply this share by the Sustainability Split to determine each jurisdiction’s share of the housing need assigned to the Sustainability Split (Column E)

In summary:

$\frac{\text{Jurisdiction's PDA Growth Total}}{\text{Total Regional PDA Growth}} \times \text{Sustainability Split} = \text{Jurisdiction's PDA Growth Scaled to Sustainability Split}$
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Non-PDA Growth

Non-PDA Growth represents the amount of growth that is expected to occur outside of PDAs. The amount of Non-PDA Growth is 56,397.

The process for determining each jurisdiction’s Non-PDA Growth Total parallels the process for identifying each jurisdiction’s PDA Growth Total:

- Divide the jurisdiction’s Non-PDA Growth Total by the total amount of Non-PDA Growth in the region to determine the jurisdiction’s Share of Non-PDA Growth (Column F). The jurisdiction’s Non-PDA Growth Total is shown in the “Not in PDAs” column on the SCS Input tab.
- Multiply this share by the Non-PDA portion of the Sustainability Split to determine each jurisdiction’s share of the housing need assigned to Non-PDA Growth (Column G).

Step 2: The Upper Threshold – Green Heading (columns I – J)

The jurisdiction’s PDA Growth Total (Column E) is divided by the jurisdiction’s household formation growth (Column I) to determine the jurisdiction’s proportion of PDA growth to household formation growth. See Section F for a description of how household formation growth is derived.

Those jurisdictions where the PDA Growth Total meets or exceeds 110% of household formation growth are highlighted in green (Column J). These jurisdictions retain their PDA Growth Total, but do not receive additional growth based on the Fair Share factors, so their total Non-PDA Growth Total (Column G) must be redistributed to other jurisdictions throughout the region.

Step 3: Growth Redistribution from Jurisdictions where the PDA Growth Total Exceeds the Upper Threshold – Purple Heading (columns L – R)

The extra growth from jurisdictions that meet or exceed the upper threshold is redistributed to other jurisdictions based on a jurisdiction’s share of the region’s total household formation growth. This share is calculated by dividing the jurisdiction’s household formation growth (Column I) by the total household growth for the region. The results are shown in (Column L). Column M shows the shares of this growth that must be redistributed (for those that have met the 110% threshold). These shares are excluded from the regional total, and the shares for other jurisdictions are recalculated (Column N).

The total amount of growth that must be redistributed is shown in Column P. This is the total amount of Non-PDA Growth for jurisdictions that meet the upper threshold. The total amount that must be redistributed throughout the region is summed at the bottom of Column P. This total is multiplied by each jurisdiction’s Redistributed Share of Growth (Column N) to determine the total number of households that the jurisdiction will receive as part of the redistribution. This total is shown in Column Q. The jurisdiction’s Adjusted Non-PDA Growth Total (Column R) is the sum of the jurisdiction’s original Non-PDA Growth Total plus its portion of the redistributed total.

D. Fair Share Component (“RHNA Model” tab)

Step 4: Application of the Fair Share Factors – Teal Heading (columns T – AB)

Columns T – Y show the impact of each of the three Fair Share Factors on a jurisdiction’s Non-PDA Growth Total (Column R). For each of the factors, there is a “Score Adjustment,” which is a percent between -100% and 100% that is applied to a jurisdiction’s Non-PDA Growth Total. The Score Adjustment is based on the jurisdiction’s performance on the Fair Share Factor. This information comes from the “Scoring Summary” tab (described in greater detail in Section B).

Column T shows a jurisdiction’s Score Adjustment based on its past RHNA performance, while Column U shows the impact this Score Adjustment has on the jurisdiction’s Non-PDA Growth Total.

Column V shows a jurisdiction’s Score Adjustment based on its total 2010 employment outside of PDAs, while Column W shows the impact this Score Adjustment has on the jurisdiction’s Non-PDA Growth Total.

Column X shows a jurisdiction’s Score Adjustment based on its transit frequency and coverage, while **Column Y** shows the impact this Score Adjustment has on the jurisdiction’s Non-PDA Growth Total.

Column Z shows the “Combined Adjustment,” which is the sum of the effects of each of the three factors on the jurisdiction’s Non-PDA Growth Total. **Column AA** shows the jurisdiction’s Factor Adjusted Non-PDA Growth Total, which is calculated by adding the Combined Adjustment (Column Z) to the Adjusted Non-PDA Growth Total (Column R).

After the scoring adjustments have been applied (Column AA), the scores must be scaled to ensure they match the regional non-PDA total that results from the Sustainability Split (56,397). This final modification is made by multiplying the jurisdiction’s share of the Factor Adjusted Non-PDA Growth (the jurisdiction’s number in Column AA divided by the sum for all jurisdictions in Column AA) by the total non-PDA growth for the region. This result is shown in **Column AB**, the Draft Non-PDA Growth Total.

Step 5: Application of the 40% Minimum Housing Floor – Orange Heading (columns AD – AG)

Column AD shows the draft RHNA allocation that is the sum of the jurisdiction’s PDA Growth Total (Column E) and Non-PDA Growth Total (Column AB). **Column AE** shows how the draft RHNA allocation compares to the jurisdiction’s household formation growth (Column I). See Section F for a description of how household formation growth is derived. Jurisdictions where the draft allocation is less than the 40% minimum housing floor are highlighted in red.

The allocation for these jurisdictions must be increased so that it meets the minimum housing floor. This is accomplished by adjusting other jurisdictions’ allocations. **Column AF** identifies the jurisdictions that have met or exceeded the minimum housing floor of 40%. Jurisdictions with a zero in Column AF have either exceeded the upper housing threshold or did not meet the minimum housing floor of 40%. **Column AG** shows the adjusted number at which the jurisdictions’ allocations are set for those who have met or exceeded the minimum housing floor. **Column AH** shows the adjusted number at which the jurisdictions’ allocations are set for those who have either exceeded the upper housing threshold or did not meet the minimum housing floor.

In the rebalancing in Column AG, the allocations for the rest of the jurisdictions in the region need to be rebalanced so the allocations to the jurisdictions that did not meet the minimum housing floor can be increased. The sum of Column AG is the total amount of housing excluded from rebalancing (because these jurisdictions have a fixed allocation, as noted above). The allocations for jurisdictions that do not have a set allocation are rebalanced based on the jurisdiction’s share of the total RHNA allocation, excluding the total for jurisdictions with set allocations.

E. Application of Final Rebalance and Reallocation (“RHNA Model” tab)

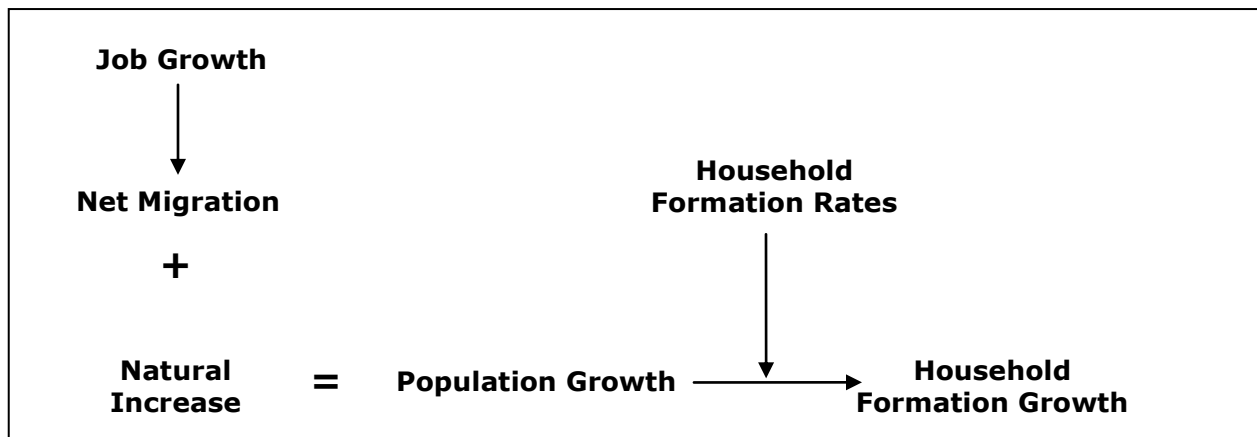
Steps 5 and 6: Application of Final Rebalance and Reallocation – Pink Heading (columns AJ - AY)

The jurisdictions’ Pre-Final RHNA is shown in **Column AJ**. A comparison of the jurisdiction’s RHNA to its household formation growth is shown in **Column AK**. The jurisdiction’s share of the region’s total RHNA is shown in **Column AL**. A comparison to the jurisdiction’s 2007-2014 RHNA is shown in **Columns AN – AO**.

A jurisdiction's RHNA is limited to no more than 150% of its allocation for the 2007-2014 RHNA. **Column AS** shows the jurisdiction's Pre-Final RHNA. **Column AT** shows the maximum RHNA for jurisdictions whose Pre-Final RHNA exceeds 150% of the 2007-2014 RHNA. The excess housing units for these jurisdictions (**Column AU**) are redistributed equally among those jurisdictions whose pre-final RHNA allocations (**Column AS**) are lower than the allocation the jurisdiction received for the 2007-2014 RHNA. **Column AV** shows the initial share of each jurisdiction prior to redistribution (with jurisdictions that exceeded the 150% mark set at 0%) while **Column AW** shows the final share of each jurisdiction and excludes the jurisdictions that exceeded the 150% mark. **Column AX** shows number that needs to be added to each jurisdiction because of the rebalancing. **Column AY** shows the final RHNA.

F. Household Formation Growth

Household formation growth is an estimate of the future number of households without taking into account financial, zoning or land availability constraints. Household formation growth is calculated based on the expected population growth and the rates at which different age and ethnic groups form households. Population growth is forecast based on natural increase, migration, and jobs.



1. **Job growth:** Expected number of jobs as a share of the national job growth, considering historic trends, performance by industry, international competitiveness, and labor skills.
2. **Net migration:** total number of people moving into the region minus people moving out of the region. This can be related to economic, social, or political reasons. The largest share of net migration is based on jobs, which means that a growing economy will attract more people and a declining economy will push people out of the region.
3. **Natural increase:** total number of expected births minus deaths.
4. **Population:** Sum of natural increase and net migration.
5. **Household formation rates:** The expected number of households formed per 100 residents over 20 years of age by age and ethnic group. If a 50% rate is applied to one million residents, it will result in 500,000 households. These rates vary by age and ethnicity. For example, many 25- to 35-year-old residents live with their parents or friends so this group will form fewer households than older groups. Similarly, many Latino and Asian households include more grandparents or cousins than White families, thus they will form fewer households. These rates are based on historic trends.

6. **Household formation growth:** Total expected growth in households derived from household formation rates applied to population growth.

Household formation growth by local jurisdiction for the San Francisco Bay Area: The process described above is developed at the regional and county levels. Then, the county total household formation growth is distributed based on each city’s share of county current population.

G. Income Allocation (“Income Distribution” tab)

The Income Distribution tab shows the steps for distributing each jurisdiction’s total RHNA into the four required income categories:

- Very low income: 0-50% of Area Median Income (AMI)
- Low income: 51-80% of AMI
- Moderate income: 81-120% of AMI
- Above Moderate: More than 120% of AMI

The total regional housing need determination from HCD is broken into these four categories as follows:

Income Category	Percent	Regional Housing Need
Very low income	24.8%	46,680
Low income	15.4%	28,940
Moderate income	17.8%	33,420
Above Moderate	42.0%	78,950
Total	100.0%	187,990

For the income allocation, each jurisdiction is given 175% of the difference between its household income distribution and the region-wide household income distribution (shown above). This income allocation method gives jurisdictions that have a relatively higher proportion of households in a certain income category a smaller allocation of housing units in that same category. Conversely, jurisdictions that have a lower proportion of households in an income category would receive a larger allocation of housing units in that same category.

Columns D – G show the jurisdiction’s existing income distribution, based on household income data from the 2005-2009 American Community Survey. Columns I – L show the jurisdiction’s income distribution after it has been adjusted by the 175% shift.

The first step in determining the jurisdiction’s Adjusted Income Distribution is to calculate the difference between the jurisdiction’s existing proportion of households in an income category and the region’s proportion of households in that income category. This difference is then multiplied by 175%. Finally, the result is added to the jurisdiction’s initial proportion of households in that income category.

The result is the share of the jurisdiction’s total RHNA allocation that will be in that particular income category. These steps are completed for each of the four income categories.

The jurisdiction's adjusted share for a particular income category (Columns I – L) is then multiplied by the jurisdiction's total draft RHNA allocation (Column B) to determine the jurisdiction's allocation for each of the four income categories (Columns N – R).

H. Draft Jurisdiction Allocation with Previous RHNA Cycles Totals (“Draft Summary” tab)

This table shows the Draft RHNA for each jurisdiction by income category. Because formulas were used to create each number, the figures are not whole numbers (integers), but all contain fractions. When added together, they may not round to the actual total. The rounding error has been corrected with the Draft RHNA given to the ABAG Executive Board on July 19, 2012.

This table also shows the total RHNA for each jurisdiction for 1999-2006 and 2007-2014.

I. Draft Jurisdiction Allocation (“Draft RHNA” tab)

This table shows the Draft RHNA for each jurisdiction by income category. The rounding errors have been fixed. This table was presented to the ABAG Executive Board on July 19, 2012 when the RHNA Methodology adopted by the Board.

J. Final Jurisdiction Allocation (“Final RHNA” tab)

This table shows the Final RHNA for each jurisdiction by income category. The table shows the final adjustments made after the appeal hearing with three appeals approved by the ABAG Executive Board on May 16, 2013. This table will be sent to the ABAG Executive Board for adoption on July 18, 2013.