NEW JERSEY LOW AND MODERATE INCOME HOUSING

PROSPECTIVE NEED FOR 1999-2024

USING THE NJ COAH PRIOR ROUND (1987-1999) METHODOLOGY

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Under New Jersey's Mount Laurel Doctrine on exclusionary zoning and affordable housing,[1] and the state Fair Housing Act enacted in 1985,[2] all New Jersey municipalities and State agencies with land use authority have a constitutional obligation to create a realistic opportunity for development of their fair share of the regional need for housing affordable to low and moderate income households.[3] This housing need, and associated fair share obligations, has three components: Rehabilitation Need, Prior Round obligation (1987-1999) and Prospective Need (post-1999). This document presents the methodology for calculating and allocating regional prospective housing need for 1999-2024 to New Jersey's 565 municipalities, and then calculating the Net Prospective component of each municipality's fair share housing obligation. It also provides the results of these calculations for all municipalities, calculating their Net Prospective Need for 1999-2024 using the Prior Round (1987-1999) methodology.

This prospective need methodology responds directly to the 2010 remedy order by the Appellate Division, affirmed by the New Jersey Supreme Court on September 26, 2013, that directed the New Jersey Council on Affordable Housing ("COAH")

"… to adopt new third round rules that use a methodology for determining prospective need similar to the methodologies used in the first and second rounds. This determination should be made on the basis of the most up-to-date available

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[1] So. Burlington Cty. N.A.A.C.P., et al. v. Mount Laurel Tp., et al., 67 N.J. 151 (1975) (Mount Laurel I), So. Burlington Cty. N.A.A.C.P. v. Mount Laurel Tp. 92 N.J. 158, 198, 208-209, 214-215 (1983) (Mount Laurel II), and subsequent decisions, including Hills v. Bernards Township, 103 N.J. 1 (1986), Toll Bros. v. West Windsor Township et al., 173 N.J. 502 (2002), and In the Matter of the Adoption of N.J.A.C. 5:96 and 5:97 by the New Jersey Council on Affordable Housing, 215 N.J. 578 (2013).
[2] N.J.S.A. 52:27D-301 et seq.
[3] The Fair Housing Act defines low and moderate income households as households with gross household incomes, respectively, of 50% or less and between 50%-80% of the regional household median income adjusted for household size. N.J.S.A. 52:27D-304c. and d.

data. The remand shall be completed within five months."[4][5][6]

"Prospective Need" is a projection of low and moderate income housing needs for a defined period in the future. COAH first developed, proposed, revised, adopted, and implemented its fair share housing methodology to project prospective need for the First Round (1987-1993) in 1986.[7] For its Second Round (1993-1999), COAH maintained the basic structure of the methodology, and adopted and implemented the updated methodology, with some minor refinements, in 1994.[8]

Under its First and Second Round methodologies, also referred to, since the early 2000s as the "Prior Round," COAH determined municipal prospective need in three phases. First, regional prospective need is calculated. Second, each region's prospective need is allocated to the municipalities within each region. Third, each municipality's obligation is adjusted based on additional, so-called "secondary" sources of housing demand and supply. The entire process has 19 discrete but inter-related steps. This document defines each of these steps and the "most up-to-date available data" used for each step in this process, as required by the Appellate Division. This Third Round prospective need methodology follows closely and almost mechanically the COAH First and Second Round methodologies. No refinements, simplifications, or revisions have been made, in keeping with the Appellate Division's Order.[9]

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[4] In the Matter of the Adoption of N.J.A.C. 5:96 and 5:97 by the New Jersey Council on Affordable Housing 416 N.J. Super. 462 (App Div 2010).

[5] In the Matter of the Adoption of N.J.A.C. 5:96 and 5:97 by the New Jersey Council on Affordable Housing, 215 N.J. 578 (2013).

[6] The Supreme Court reaffirmed this remedy and on March 14, 2014 established a new timetable for compliance, requiring COAH to propose and adopt new post-1999 rules, with publication of the adoption notice in the November 17, 2014 edition of the New Jersey Register. In the Matter of the Adoption of N.J.A.C. 5:96 and 5:97 by the New Jersey Council on Affordable Housing, Order ___ N.J. _____ March 13, 2014.

[7] COAH published the methodology regulations and the methodological, "technical" appendix at N.J.A.C. 5:92-2 through -5 and Appendix A, 18 N.J.R. 1527-1548, August 4, 1986+
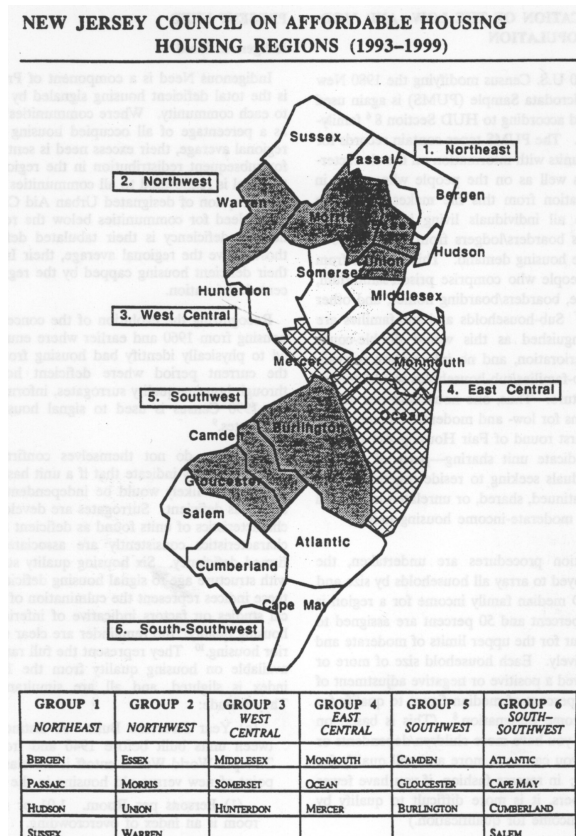
[8] COAH published the methodology regulations and methodological appendix at N.J.A.C. 5:93-2 and Appendix A. 26 N.J.R. 2300-2353, June 6, 1994.

[9] In the interest of maintaining comparability with the prospective need methodology proposed by COAH in proposed N.J.A.C. 5:99, Appendices A and C, 46 N.J.R. 949-956 and 982-1010, published June 2, 2014, this report does not

No policy judgments have been made, except for the weighting of undeveloped land in the Highlands Region for calculating the land allocation factor (see Step 12), as the Highlands Water Protection and Planning Act was enacted in 2004, a decade after COAH adopted its Second Round methodology. [10]

FIRST PHASE: CALCULATING REGIONAL PROSPECTIVE NEED

Step 1: Identify "housing regions" – COAH has completed the first step in its methodology by using journey-to-work data from the Census to determine groupings of two to four counties into "housing regions," as required by the Fair Housing Act.[11] COAH last grouped the state's counties into six housing regions in 1994, as shown and listed below:[12]

NEW JERSEY COUNCIL ON AFFORDABLE HOUSING
HOUSING REGIONS (1993–1999)

GROUP 1 NORTHEAST	GROUP 2 NORTHWEST	GROUP 3 WEST CENTRAL	GROUP 4 EAST CENTRAL	GROUP 5 SOUTHWEST	GROUP 6 SOUTH–SOUTHWEST
BERGEN	ESSEX	MIDDLESEX	MONMOUTH	CAMDEN	ATLANTIC
PASSAIC	MORRIS	SOMERSET	OCEAN	GLOUCESTER	CAPE MAY
HUDSON	UNION	HUNTERDON	MERCER	BURLINGTON	CUMBERLAND
SUSSEX	WARREN				SALEM

include reallocated present need in its methodology.
[10] L. 2004, c. 120, N.J.S.A. 13:20-1 et seq.
[11] N.J.S.A. 52:27D-304b.
[12] N.J.A.C. 5:93 Appendix A.

COAH reexamined and reaffirmed these housing regions in 2004[13] and 2008.[14]

<u>Step 2: Determine the population projection period</u> – To project the future need for housing, an important starting point is projecting the future population, which requires deciding on a population projection period. COAH's Second Round ended June 30, 1999. The Fair Housing Act, as amended in 2008, requires that present and prospective need to be "computed for a 10-year period."[15] This implies a population projection period extending ten years from the present, i.e., 2014, but beginning in 1999 at the end of the 1987-199 Prior Round last calculated by COAH and not invalidated by the courts, for a projection period from July 1, 1999 to June 30, 2024 (25 years).

<u>Step 3: Project population increase 1999-2024</u> - The New Jersey Department of Labor and Workforce Development ("NJDOLWD") regularly prepares, updates, and publishes population projections for the state and its counties. In January 2013, NJDOLWD most recently projected the state's population by county for 2010-2030 by five-year intervals, as of July 1 for each projection period, using its "preferred" Economic-Demographic Model.[16] NJDOLWD has also projected populations by age cohorts (five year increments) by county.[17] The projected population as of July 1, 2024 and the projected 1999-2024 population increase may be calculated by interpolation from the published NJDOLWD projections. Population projections by

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[13] <u>N.J.A.C.</u> 5:94 Appendix A.

[14] <u>N.J.A.C.</u> 5:97 Appendix A.

[15] <u>N.J.S.A.</u> 52:27D-307c.(1). This ten-year period also coincides with the term of a municipality's immunity from litigation once granted substantive certification upon approval of its housing element and fair share plan. The tem-year period starts on the date the municipality filed its housing element and fair share plan with COAH. <u>N.J.S.A.</u> 52:27D-313a.

[16] See "Introduction to Population and Labor Force Projections for New Jersey Counties, no date, and data tables in Excel available on the NJDOLWD website: http://lwd.dol.state.nj.us/labor/lpa/dmograph/lfproj/lfproj_index.html

[17] The standard age cohorts used by the Census and NJDOLWD are: under 5 years, 5 to 9 years, 10 to 14 years, 15 to 19 years, 20 to 24 years, 25 to 34 years, 35 to 39 years, 40 to 44 years, 45 to 49 years, 50 to 54 years, 55 to 59 years, 60 to 64 years, 65 to 69 years, 70 to 74 years, 75 to 79 years, 80 to 84 years, and 85 years and older.

county by age cohort are then aggregated into regional population projections for the six housing regions determined by COAH. To provide some statewide context, the 2010 Census reported a total population for New Jersey of 8,791,894, while NJDOLWD projected a total 2025 population for the state of 9,446,800, a projected rate of increase of 0.49% per year.

Step 4: Identify and remove "group quarters" residents from projections of the total population[18]
By Census Bureau definition, residents of group quarters, such as group homes, juvenile institutions, prisons, and college dormitories, are not part of a household and do not live in housing units.[19] Therefore, the next step in projecting the future need for housing is to identify the population living in group quarters, both in 1999 and projected for 2024, and then remove the projected additional group home residents from the total projected population by region. The U.S. Census Bureau counts the population living in group quarters by county and age cohort, both in the decennial census[20] and in its American Community Survey Public Use Microdata Sample (PUMS) files.   To provide some context, 2.12% of New Jersey's 2010 population of 8,791,894 people, i.e., 186,876 people, lived in group quarters.[21] Projecting the group quarters population in 2024 requires making assumptions on the percentage of the state's population by county by age groups that will be living in group quarters by 2024, based on observed trends and assumptions. The needed data is readily available from the decennial

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[18] While the COAH Prior Round methodology removed people living in group quarters from the population projections, COAH nevertheless granted credits against municipal fair share housing obligations for group quarters on the First and Second Rounds, for facilities it called "alternative living arrangements," which included group homes, boarding houses, transitional facilities for the homeless, etc. See N.J.A.C. 5:93-5.8 and the definition of "alternative living arrangements," at N.J.A.C. 5:93-1.3. Granting credits for facilities without projecting a need for those facilities is problematic, but that was the COAH methodology in the Prior Round and it is followed here, in this methodology.

[19] The U.S. Census Bureau definition, for its American Community Survey, is:
"A group quarters is a place where people live or stay, in a group living arrangement that is owned or managed by an entity or organization providing housing and/or services for the residents. This is not a typical household-type living arrangement. These services may include custodial or medical care as well as other types of assistance, and residency is commonly restricted to those receiving these services. People living in group quarters are usually not related to each other. Group quarters include such places as college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, and workers' dormitories."
https://www.census.gov/acs/www/Downloads/data_documentation/GroupDefinitions/2010GQ_Definitions.pdf
<accessed April 28, 2014>

[20] U.S. Census Bureau, 2010 Census, SF-1, Table PCO1.

[21] U.S. Census Bureau, 2010 Census, SF-1, Table P43.

census and the American Community Survey.[22] This methodology assumes the percentage of the population living in group quarters remains constant during the projection period.

Step 5: Project headship rates for 1999-2024 - The headship rate is the "probability that a person is the head of a household,"[23] which varies by demographic groups. In general, the headship rate rises with age.   The methodology uses the headship rate to project the number of future households, by multiplying the projected population for each age cohort by the cohort's headship rate. By definition, households live in housing units, so projecting headship rates leads to projecting the need for housing for households. In its Second Round methodology, COAH compared 1980 and 1990 headship rates and assumed that headship rates would increase during 1993-1999 at one-half the rate of change observed during 1980-1990. During 1990-2000, however, the statewide headship rate in New Jersey actually declined. The 1990-2000 declining trends in headship rate change by age group by county, or housing region, can readily be used to project headship rates for 2024.[24] The data needed to calculate headship rates, i.e., the number of households and the total non-group quarters population, are readily available from the 1990 and 2000 U.S. Census and are used to calculate headship rates (average persons per household) by age group by county. [25] This methodology uses the observed 1990-2000 headship rate change to project headship rates for the projection period, as it best approximates the actual headship rate change observed in 2000-2010.

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[22] U.S. Census Bureau, American Fact Finder website: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml
[23] Timothy Dunne, "Household Formation and the Great Recession," Federal Reserve Bank of Cleveland, August 23, 2012; http://www.clevelandfed.org/research/commentary/2012/2012-12.cfm accessed April 28, 2014>
[24] COAH published 1999 headship rates by age group by housing region in 2004, at N.J.A.C. 5:94 Appendix A.
[25] http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_submenuId=&_lang=en&_ts=
 and
http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_tabId=DEC2&_submenuId=datasets_1&_lang=en&_ts=312388489998

Step 6: Project the increase in households 1999-2024 – The projected increase in non-group quarters population during 1999-2024, from Step 4, is multiplied by the headship rates for 2024, from Step 5, and yields the projected increase in households by county during 1999-2024.

Step 7: Determine the projected increase in low and moderate Income households 1999-2024 - COAH determined in 2004, by analyzing 2000 U.S. Census data,[26] that 40.3% of New Jersey households qualified, on the basis of income, as low and moderate income households and assumed that the same percentage would apply to projected households.[27] This percentage can be easily applied to projected new households by county for 2024, from Step 6, and then aggregated by housing region to calculate the projected additional low and moderate income households, by age cohort, anticipated to be formed during 1999-2024 in each housing region.

Step 8: Pool and reallocate projected growth in low and moderate income households below age 65 - This reallocation, from the COAH Second Round methodology, pools on a statewide basis and then assigns the working age (<65 years) component of projected low and moderate income household growth to regions where jobs previously increased. Projected growth in >65 years households, which COAH presumed to be non-working, is retained its original region. The reallocation factor is based on the proportional regional shares of nonresidential ratable growth. This reallocation factor is calculated and also used later, in the allocation phase of the fair share methodology, explained as Step 11. Step 7 provides the data on projected regional

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[26] COAH analyzed 2000 U.S. Census 5% PUMS data. Relying on this analysis of 2000 data for the current Prior Round prospective need methodology, despite the availability of data from the 2010 Census, is appropriate as the projection period begins in 1999. Also, this approach is consistent with COAH's Second Round methodology, when COAH analyzed 1990 Census 5% PUMS data to income qualify low and moderate income households, as 1990 was close to the 1993 beginning of the Second Round projection period.

[27] N.J.A.C. 5:94 Appendix A and 36 N.J.R. 3798, New Jersey Register, August 16, 2004, "Income Qualification of the Low- and Moderate-Income Population." COAH was not as transparent and did not disclose in either its First Round or its Second Round the percentage of households it deemed qualified as low and moderate income households. In 2008, in its second iteration of Third Round rules, COAH determined, by analyzing 2000 U.S. Census 5% PUMS data, that 37.7% of all households were low and moderate income households. N.J.A.C. 5:97 Appendix A, 40 N.J.R. 2918, New Jersey Register, June 2, 2008. However, COAH in 2008 incorrectly calculated this percentage, as it divided projected low and moderate income households by housing units (both occupied and vacant), which reduced the percentage, as the correct denominator was the number of total households, i.e., occupied housing units.

low and moderate income household growth (projected population multiplied by headship rate) to be pooled, .

Step 9: Determine regional prospective need – By definition, under the COAH fair share methodology the projected increase in regional low and moderate income households, pooled and reallocated by two age groups in Step 8, equals the gross regional prospective need for low and moderate income housing. Step 8 provides the data for this determination. Regional Prospective Need for all five regions and summed for the entire state are presented below:

Regional Prospective Need, 1999-2024		
	Region	Housing Units
1	Northeast: Bergen, Hudson, Passaic, Sussex	36,018
2	Northwest: Essex, Morris, Union, Warren	38,941
3	West Central: Hunterdon, Somerset, Middlesex	34,542
4	East Central: Mercer, Monmouth, Ocean	40,028
5	Southwest: Burlington, Camden, Gloucester	33,629
6	Atlantic, Cape May, Cumberland, Salem	17,571
TOTAL		200,729

SECOND PHASE: ALLOCATING MUNICIPAL PROSPECTIVE NEED

In the second phase, under both the First Round and Second Round methodologies, regional prospective need is allocated on a regional basis to each housing region's municipalities after first exempting certain mostly urban or densely populated municipalities. The methodology uses three allocation factors, described by COAH as measures of "responsibility," based on the labor force, existing in or attracted to each municipality, that needs

housing, and measures of "capacity," based on the physical capacity of the municipality's land and the fiscal capacity of its households to absorb low and moderate income housing based on their household incomes.[28] The three factors are: (a) change in equalized nonresidential valuation (ratables) over the previous two decades, as a proxy for changes in the labor force, (b) undeveloped land, and (c) differences in household income. For each allocation factor, the methodology calculates the total regional value of each factor and each municipality's fraction, or share, of the regional total of the factor. Stated differently, the value of each factor for each municipality is divided by the regional total for each allocation factor. The three resulting numbers, expressed as decimals, are averaged to yield each municipality's fair share of the regional need. All three factors are weighted equally (averaged) in allocating regional prospective need among each region's municipalities. The data needed to allocate post-1999 regional prospective need using the Second Round methodology are identified below in the description of each allocation factor.

Step 10 - Exempt selected Urban (Municipal) Aid municipalities from housing need allocations – The COAH First Round and Second Round methodologies exempted certain Urban (Municipal) Aid municipalities from any allocation of regional prospective if the municipality met at least one of three criteria:

(a) Housing deficiency (i.e., substandard housing in need of rehabilitation) greater than its region's average,

(b) Population density greater than 10,000 persons per square mile of land area (15.6 persons per acre)[29], or

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[28] N.J.A.C. 5:93 Appendix A, "Distribution of Low- and Moderate-Income Housing Need."
[29] COAH's explanation of its Second Round methodology, N.J.A.C. 5:93 Appendix A, Distribution of Low- and Moderate-Income Housing Need, incorrectly states that 14.1 persons per acre is the equivalent of 10,000 person per

(c) Population density of 6,000 to 10,000 persons per square mile of land area (9.4 persons/acre to 15.6 persons/acre) and less than five percent vacant, non-farm parcels, as measured by the average of:

    (i) The number of vacant land parcels as a percentage of the total number of parcels by municipality and

    (ii) Vacant land valuation (ratables) as a percentage of total valuations by municipality.

The methodology refers to municipalities that meet at least one of these criteria as "qualifying Urban Aid municipalities." The data needed to determine which municipalities to exempt are obtained from the U.S. Census Bureau, DCA, and DOLWD. The New Jersey Department of Community Affairs ("DCA") annually publishes the State's official list of Municipal (Urban) Aid municipalities.[30] This methodology uses the current, State Fiscal Year 2014 list. While the First Round and Second Round methodologies relied on six housing deficiency criteria, COAH in 2004 and 2008 revised the methodology to three criteria, and used 2000 Census data to calculate housing deficiency[31]: (i) overcrowded units built pre 1950, (ii) unit with inadequate plumbing, and (iii) unit with inadequate kitchen.[32] NJDOLWD publishes population density by municipality, most recently for 2010 and 2012; the methodology uses 2012 data.[33] DCA

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square mile. The correct equivalency is 15.8 persons per acre (1 square mile = 640 acres; 10,000/640 = 15.6).

[30] The DCA website posts the SFY2014 list at: http://www.state.nj.us/dca/divisions/dlgs/resources/stateaidinfo.shtml

[31] N.J.A.C. 5:97 Appendix B.

[32] A reason for not attempting to update the housing deficiency calculations using 2010 Census or subsequent American Community Survey data is that the Appellate Division in 2008, as affirmed by the Supreme Court in 2013, affirmed COAH's determination in 2008 of present need ("rehabilitation share"), which is based on data on the three components of housing deficiency.

[33] http://lwd.dol.state.nj.us/labor/lpa/dmograph/est/mcd/density.xls

annually publishes data on vacant land value (ratables) by municipality; this methodology uses 2011 data.[34]

Step 11 – Calculate the equalized nonresidential valuation (ratables) factor – DCA's Division of Local Government Services collects, reports annually, and maintains accessible data on ratables by municipality.   Data from 1998-2013 on equalized nonresidential valuation by municipality may be downloaded in Excel format from the DCA website.[35].   This methodology calculates this allocation factor using 1990 and 2011 municipal data on nonresidential ratables[36] to calculate the 1990-2011 changes in non-residential valuations, excluding qualifying Urban Aid municipalities. The change in each municipality's non-residential valuations (ratables) is divided by the regional total of change in non-residential valuations (ratables) to compute each municipality's share of the regional change.

Step 12 – Calculate the undeveloped land factor – Under its Second Round methodology, COAH estimated the area of undeveloped land by municipality with satellite imagery[37] and weighted the value of undeveloped land in keeping with the goals of the "planning areas" as delineated in the 1992 State Development and Redevelopment Plan ("SDRP") adopted by the State Planning Commission.   For example, undeveloped land in Planning Area 1, the Metropolitan Planning Area, was assigned a weighting of 1.0, while undeveloped land in Planning Area 4, the Rural Planning Area, was assigned a weighting of 0.0. The Second Round methodology weighted undeveloped land in the Pinelands by treating undeveloped land in Pinelands growth areas, i.e., Regional Growth Areas and Pinelands Towns, as mapped by the

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[34] See the Property Value Classification spreadsheets available in Excel format for 1998-2013 on the DCA website: http://www.nj.gov/dca/divisions/dlgs/resources/property_tax.html

[35] See the Property Value Classification spreadsheets available in Excel format for 1998-2013 on the DCA website: http://www.nj.gov/dca/divisions/dlgs/resources/property_tax.html

[36] To enable fair comparisons among municipalities and compute regional totals fairly, State-approved equalization ratios are used so that equalized values are used and compared in the methodology.

[37] COAH estimated, with the assistance of the Department of Environmental Resources at Cook College at Rutgers, "undeveloped land" based on LANDSAT photoimagery taken March 1991. See N.J.A.C. 5:93 Appendix A. 26 N.J.R. 2346, June 6, 1994.

Pinelands Commission on its Land Capability Map,[38] as the equivalent of the SDRP's Planning Area 3 – Fringe Planning Area, weighted 0.5. All seven other Pinelands land capability classification were treated as the equivalent of the SDRP's Planning Area 4 – Rural Planning Area and Planning Area 5 – Environmentally Sensitive Planning Area, weighted 0.0. The Second Round methodology treated undeveloped land in the Meadowlands in its "growth areas" as the equivalent of Planning Areas 1 and 2, weighted at 0.0, and its "protected or open space areas" as the equivalent of Planning Areas 4 and 5, weighted at 0.0.[39]

This methodology takes the same approach as COAH took in the Second Round and estimates undeveloped land using satellite imagery. This methodology also continues the weightings established in the Second Round methodology in the Pinelands and Meadowlands, and elsewhere in the state under the most recently adopted State Development and Redevelopment Plan, from 1992.

Since the 1994 adoption of COAH's Second Round methodology, the State established the Highlands Water Protection and Planning Council, and defined a 859,358 acre Highlands Region.[40] While the Highlands Act delineated both a Highlands Preservation Area and a less restrictive Highlands Planning Area, where municipal land use planning conformance is not required, the Highlands Council's adopted 2008 Highlands Regional Master Plan[41] ignored the

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[38] The Pinelands Commission's Land Capability Map may be accessed at:
http://www.state.nj.us/pinelands/landuse/gis/maps/archD.pdf . Detailed, large-scale quad maps depicting the Pinelands land classification mapping are available from the NJ Office of Planning Advocacy website, at: http://www.nj.gov/state/planning/resources-quad.html

[39] Unfortunately, COAH in 1994 did not disclose how it defined spatially Meadowlands "growth areas" and "protected or open space areas" and whether it based the mapping on the Land Use Plan of the Meadowlands Master Plan, since 1994 last revised in 2004 (available at:
http://www.njmeadowlands.gov/doc_archive/NJMC%20Doc%20Archive/econgrow_docs/lum_docs/NJMC%20Master%20Plan%20with%20maps.pdf),
or on the zones in the Meadowlands Official Zoning Map, since 1994 last revised in 2009 (available at:
http://www.njmeadowlands.gov/doc_archive/NJMC%20Doc%20Archive/econgrow_docs/lum_docs/OFFICIAL%20ZONING%20MAP%202009%20PDF.pdf)

[40] Highlands Water Protection and Planning Act, L. 2004, c. 120, N.J.S.A. 13:20-1 et seq.

[41] http://www.highlands.state.nj.us/njhighlands/master/index.html

distinction.[42] Instead, the Highlands Council then classified and mapped all lands in the Highlands according to seven "land use capability zones" across the entire Highlands Region.[43] The Highlands Regional Master Plan promotes "sustainable and economically viable development" and "compatible development and redevelopment," but only in its Existing Community Zone,[44] which is analogous to the Pinelands Regional Growth Area, in which COAH's Second Round methodology assigned undeveloped land a weighting of 0.5. Consequently, this methodology follows the Pinelands precedent and assigns undeveloped land in the Highlands a weight of 0.5 if in its Existing Community Zone. All other undeveloped land in the Highlands Region is assigned a weighting of 0.0.

In summary, undeveloped land is weighted in this methodology as follows:

Weighting of Undeveloped Land for Undeveloped Land Factor	
Planning Area Type	Weighting Factor
Planning Area 1 - Metropolitan	1.0
Planning Area 2 - Suburban	1.0
Planning Area 3 - Fringe	0.5
Planning Area 4 - Rural	0.0
Planning Area 5 - Environmentally Sensitive	0.0
Pinelands Regional Growth Area	0.5
Pinelands Town	0.5
All Other Pinelands	0.0
Meadowlands "growth areas"	1.0
Meadowlands "protected or open space areas"	0.0
Highlands Existing Community Zone	0.5
All Other Highlands	0.0

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[42] The Highlands Council's regional planning approach was "blind to the line," i.e., the line between the Preservation Area and the Planning Area, according to its oft repeated mantra at the time.

[43] For the methodology used by the Highlands Council in this mapping, see Highlands Council, Technical Report: Land Use Capability Zone Map, 2008,
 http://www.highlands.state.nj.us/njhighlands/master/tr_land_use_capability_zone_map.pdf
 <accessed April 29, 2014> The 2008 Highlands Regional Master Plan presents the Land Use Capability Zone Map at pp.114-115. The Map may also be accessed via the Council GIS website: http://maps.njhighlands.us/hgis/

[44] Highlands Regional Master Plan, pp. 190-1.

The "most up-to-date available data" for measuring undeveloped land by municipality by planning area or equivalent for all of the state is the 2007 "land use/land cover" data for all of New Jersey obtained by the New Jersey Department of Environmental Protection ("DEP"), released publicly in 2010,[45] and analyzed by researchers at Rowan University and Rutgers University in 2010.[46] Digital maps of the current planning areas or equivalents are available through the State's Office for Planning Advocacy[47] and the Highlands Council.[48] Classifying and calculating the area of undeveloped land by planning area type by municipality is best done using a digital geographical information system (GIS) to overlay digital maps of the planning area boundaries with digital maps of undeveloped land and then measure the total undeveloped land area by municipality by planning area type. Researchers at the Geospatial Research Laboratory at Rowan University performed these overlay analyses and calculations of undeveloped land by planning area by municipality in 2010-2011,[49] which is the data source for this methodology.[50] [51] [52]

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[45] The 2007 imagery ("aerial photos") may be consulted at the DEP website, at its i-MapNJ DEP website, http://www.nj.gov/dep/gis/depsplash.htm# , or its next generation NJ-Geo Web website, http://www.nj.gov/dep/gis/geoweblaunch.htm

[46] John Hasse and Richard Lathrop, Changing Landscapes in the Garden State: Urban Growth and Open Space Loss in NJ 1986 thru 2007, 2010, available at: http://gis.rowan.edu/projects/luc/changinglandscapes2010.pdf

[47] The State Planning Commission last adopted a revised State Development and Redevelopment Plan in 2001. Its State Plan Policy Map, with amendments adopted from time-to-time by the Commission, should be used in the calculation of undeveloped land by planning area types. The 2001 State Plan Policy Map and other maps and GIS resources are available at: http://www.nj.gov/state/planning/plan.html

[48] http://www.highlands.state.nj.us/njhighlands/actmaps/maps/gis_data.html

[49] More recent, 2012 statewide aerial imagery is now available from DEP's NJ-Geo Web website, but were not available when the Rowan researchers conducted their research.

[50] Rowan-Rutgers first grouped all 5.5 million acres of land and water in New Jersey into six broad categories of land use/land cover: urban (i.e., developed), agriculture, forest, water, wetlands, and barren (a so-called "Level 1" analysis). Rowan-Rutgers then classified the remaining 3.2 million acres of land into two categories: "restricted" from development and "available" for development. Land considered restricted from development consisted of preserved open space, preserved farmland, steep slopes >15%, wetlands buffered to 50 feet, and Category 1 streams buffered to 300 feet. The land areas remaining after this analysis, a total of 991,649 acres, constituted the estimate of open land (i.e., undeveloped) available for development, as of 2007. See Hasse and Lathrop (2010) for a detailed explanation of this analysis and its limitations, particularly pp. 20-21.

[51] This methodology considers undeveloped land in the Meadowlands classified as "available" by Rowan-Rutgers as the "growth areas" treated as the equivalent of Planning Area 1 in COAH's Second Round methodology, weighted 1.0. This methodology also considers undeveloped land in the Meadowlands classified as "restricted" by Rowan-Rutgers as the "protected or open space areas" treated as the equivalent of Planning Areas 4 and 5 in COAH's Second Round methodology, weighted 0.0.

[52] The data are available from Fair Share Housing Center, which commissioned the overlay mapping and calculations

The final step in the process of calculating the undeveloped land factor is to apply the weighting factors and sum the total weighted undeveloped land area by municipality and then by region. Each municipality's share of its region's weighted undeveloped land becomes its undeveloped land factor or coefficient.

Step 13 – Calculate the differences in household income factor – The COAH Second Round methodology defines the aggregate income difference factor as the average of two measures of median household income:

Income Measure No. 1: Municipal share of the regional sum of the differences between median household income and an income floor ($100 below the lowest average (mean) household income in the region) and

Income Measure No. 2: Municipal share of the regional sum of the differences between median municipal household incomes and an income floor ($100 below the lowest median household income in the region) weighted by the number of households (occupied housing units) in the municipality [53]

Up-to-date median and mean household income and number of households data by municipality are readily available from the 2012 five-year American Community Survey conducted by the U.S. Census Bureau.[54] This data for all municipalities, except for qualifying Urban Aid municipalities, is used in this methodology to calculate municipal shares of differences in regional household incomes, i.e., the income difference factor,,

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by Rowan University researchers, and in the Excel workbook that accompanies and is part of this report.
[53] N.J.A.C. 5:93 Appendix A; 26 N.J.R. 2346-7, June 6, 1994.
[54] http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml

Step 14 - Distribute Low and Moderate Income Housing Need by Municipality – Once the three individual allocation factors have been determined, the three factors are averaged to yield the factor for distributing gross regional prospective need among the non-Urban Aid municipalities in each region. Multiplying the regional gross prospective need by a municipality's average allocation factor, or coefficient, yields a municipality's fair share of the regional gross prospective need.

THIRD PHASE: ADJUSTING FOR SECONDARY SOURCES OF DEMAND AND SUPPLY

Once the gross municipal prospective need has been calculated and allocated, the next steps in the methodologies are to calculate the three so-called "secondary sources of housing demand and supply."[55] Gross municipal prospective housing need is then adjusted, based on these three components of the housing market that, according to the COAH Prior Round methodology, affect the supply and demand for housing affordable to low and moderate income households: filtering, residential conversions, and demolitions.

Step 15 – Estimate filtering affecting low and moderate income households – Filtering is the private housing market process by which some units decline in value and become affordable to low and moderate income households. Filtering reduces low and moderate income housing need according to the COAH First and Second Round methodologies. In 2007, the Appellate Division invalidated COAH's initial Third Round method for calculating filtering, as unsubstantiated by reliable data.[56] COAH then retained a consultant, Econsult, which analyzed property-level data on 457,910 residential real estate transactions in New Jersey during 1989-2005 to determine which housing units filtered up or down and which affected low and moderate

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[55] N.J.A.C. 5:93 Appendix A, "Secondary Sources of Housing Supply and Demand."
[56] In re the Adoption of N.J.A.C. 5:94 and 5:95 by the New Jersey Council on Affordable Housing, 390 N.J. Super. 1, 46 (App. Div., 2007).

income households. Using new this new data and Econsult's new methodology,[57] COAH in 2008 projected the impact of filtering as a secondary source of supply of low and moderate income housing at 23,626 housing units statewide for the period 1999-2018. COAH also projected filtering by housing region and municipality.[58] This is the best available data on filtering. This methodology extends the COAH projections by extrapolation to 2024, both up and down filtering by municipality, for a net total of net filtering of 59,237 units.

Step 16 – Estimate residential conversions affecting low and moderate income households – COAH defines "residential conversions" as the creation of a new dwelling unit from an existing structure (residential or non-residential), measured as the change in total housing units, accounting for new construction and demolitions. Residential conversions reduce low and moderate income housing need, according to the COAH First Round and Second Round methodologies.[59] In its Third Round rules, COAH estimated that 19.5% of converted units were affordable to low and moderate income households and projected the conversion of 10,366 housing units statewide for the period 1999-2018 (531.58974/year for 19.5 years) as a secondary source of supply of low and moderate income housing.[60] . Using this annual projection rate, which is the best available data on the share of residential conversions that affect low and moderate income households, results in a projection for the full 1999-2024 projection period of 13,224 converted units (531.58974/year x 25 years), based on COAH's published regional projections, pro-rated for 25 years:

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[57] N.J.A.C. 5:97 Appendix F.3. Estimating The Extent To Which Filtering Is A Secondary Source Of Affordable Housing, Econsult Corporation, November 16, 2007.

[58] COAH's consultant, Econsult, estimated that "47,306 units were expected to filter down to households of lower incomes between 1999 and 2018" with one-half of these units in suburban communities. COAH choose to include only the suburban share of filtering as a secondary source. See N.J.A.C. 5:97 Appendix A and Appendix F.3. Estimating The Extent To Which Filtering Is A Secondary Source Of Affordable Housing, Econsult Corporation, November 16, 2007.

[59] N.J.A.C. 5:93 Appendix A; 26 N.J.R. 2349, June 6, 1994.

[60] N.J.A.C. 5:97 Appendix A; 40 N.J.R. 2921, June 2, 2008.

Residential Conversions, 1999-2024		
	Region	units
1	Northeast: Bergen, Hudson, Passaic, Sussex	1,491
2	Northwest: Essex, Morris, Union, Warren	1,645
3	West Central: Hunterdon, Somerset, Middlesex	2,285
4	East Central: Mercer, Monmouth, Ocean	4,031
5	Southwest: Burlington, Camden, Gloucester	2,665
6	Atlantic, Cape May, Cumberland, Salem	1,173
TOTAL		13,290

According to COAH's Second Round methodology, conversions are closely related to the percentage of two- and four-family structures in a municipality. This methodology then allocates each municipality's share of the region's residential conversions based on the municipality's share of the region's 2-4 unit structures. The five-year American Community Survey of the Bureau of the Census for 2012 provides the best available data on the number of 2-4 unit structures by municipality, which are used to estimate the municipal share of projected regional residential conversions affordable to low and moderate income households.

Step 17 - Estimate demolitions affecting low and moderate income households – According to the 2008 iteration of COAH's Third Round methodology, 19.5% of demolitions of housing affect low and moderate income households.[61] Demolitions increase prospective need. Annual municipal-level demolitions data from 1999 through 2012 are readily available, as reported to DCA and published on its Construction Reporter website.[62] This methodology uses actual

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[61] N.J.A.C. 5:97 Appendix A, "Secondary Sources of Supply."
[62] http://www.state.nj.us/dca/divisions/codes/reporter/

1999-2011 demolitions data, extended by extrapolation for the full 1999-2024 projection period, projecting a statewide total of 24,434 units affecting low and moderate income households.

Step 18 – Calculate net prospective need by municipality – Under the COAH First and Second Round methodologies, the addition of demolitions (from Step 17) and the subtraction of filtering (from Step 15) and residential conversions (from Step 16) from the gross prospective need for each municipality yields the net prospective need for each municipality. As the best available data now enables a projection of units that filter up, as well as down, both up and down filtering are included in this methodology

Step 19 – Calculate the 20% cap and if applicable, reduce the prospective need – Under the COAH Second Round methodology, a municipality's prospective need may not exceed a cap defined as 20% of the municipality's occupied housing.[63] The cap is calculated by multiplying the number of occupied housing units in the municipality in 2012, available from the Census Bureau, 2008-2012 ACS 5-year estimates, by 0.20. If the cap is larger than the net prospective need calculated in Step 18, the cap is not applicable. If the cap is smaller than the net prospective need calculated in Step 18, then the cap becomes the adjusted net prospective need. The data for this step is readily available from the Census.

CONCLUSION

The output from carrying out this sequence of 19 steps is the calculation of regional prospective housing need for 1999-2024, its allocation, by region, to each of the state's 565 municipalities, and calculation of net prospective need at the municipal level. Illustrative municipal allocations from all 21 counties are shown below:

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[63] N.J.A.C. 5:93-2.16. The Fair Housing Act authorized this cap, but did not prescribe the percentage of existing occupied housing stock to be used to calculate the cap, N.J.S.A. 52:27D-307e.

Illustrative 1999-2024 Municipal Prospective Need Calculated Using the COAH Prior Round Methodology		
Municipality	County	Net Prospective Need, 1999-2024 (housing units)
Absecon	Atlantic	206
Allendale	Bergen	401
Bass River	Burlington	90
Audubon Borough	Camden	102
Avalon	Cape May	207
Bridgeton	Cumberland	0
Belleville	Essex	0
Clayton	Gloucester	198
Bayonne	Hudson	0
Alexandria	Hunterdon	338
East Windsor	Mercer	773
Carteret	Middlesex	0
Aberdeen	Monmouth	439
Boonton Town	Morris	251
Barnegat Light	Ocean	53
Bloomingdale	Passaic	419
Alloway	Salem	224
Somerset	Somerset	502
Andover Borough	Sussex	65
Berkeley Heights	Union	630
Alamuchy	Warren	257
Source: Fair Share Housing Center and Kinsey & Hand calculations, July 2014		

An Excel workbook with 26 linked worksheets provides the data, data sources, and calculations used to compute 1999-2024 net prospective need allocations for all 565 New Jersey municipalities using the methodology and data described in this report. It is the appendix to this report's text.

APPENDIX

Excel workbook – see accompanying CD