



An Introduction to the National Longitudinal Land Use Survey and Data

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As communities across the United States grapple with a growing housing affordability crisis, zoning regulations have emerged as a focus of policy reform pressure and research. Evidence shows that zoning and land-use regulations can increase housing costs, restrict housing supply, and exacerbate economic and racial inequities. National data on zoning regulatory practices can improve our ability to address these issues. This brief introduces one such source of data—the National Longitudinal Land Use Survey (NLLUS), created by the Urban Institute—to researchers, local officials, advocates, and residential development practitioners.

The Urban Institute partnered with Rolf Pendall to provide access to US land use and zoning regulation data over the past 25 years through the NLLUS. This brief discusses the NLLUS's motivation, topics covered, and data-collection methods, as well as limitations and recommended uses of the NLLUS data.

Why Residential Land-Use Regulation Matters

US policymakers created residential land-use planning and zoning regulations (which include laws governing affordable housing, growth management, and permitting procedures and fees) in the early 1900s as a response to the challenges of urban development, such as pollution and overcrowding. Over time, these local regulations have grown increasingly complex and have evolved to address a broader

range of policy goals, from protecting open space to assuring adequate public infrastructure (Landis, forthcoming; Pendall, Puentes, and Martin 2006). Land-use regulation can advance those goals, but empirical assessments of its benefits are few (Landis, forthcoming). And, determining the benefits of specific approaches is difficult because land-use regulations vary widely among states and localities.

In recent years, researchers and policymakers have focused on the costs of excessive or exclusionary local land-use regulations. From the start, land-use planning and regulation—especially zoning—were designed to segregate US cities by race (Rothstein 2017), income (Danielson 1976), and housing tenure (Levine 2010); by restricting new development, they protected the interests of homeowners—most often white and higher-income—at the expense of renters and potential in-movers. A growing body of research also suggests several ways that land-use regulations can raise the cost of housing (Glaeser, Gyourko, and Saks 2005a; Malpezzi 1996; Quigley and Raphael 2005). These rules can mandate larger, pricier houses and more expensive infrastructure than builders would otherwise provide. They can restrict land supply in ways that force builders to lower the number and types of houses they provide. They can also make the permit approval process longer or more uncertain, thereby increasing development costs that are often passed on to new home buyers (Luger and Temkin 2000). Owners with equity in their homes influence and benefit from land-use policy processes and regulations (Been, Madar, and McDonnell 2014; Einstein, Palmer, and Glick 2019).

Whether and how these regulations are changing is up for debate. Several researchers have observed that land-use controls are becoming more restrictive. For example, Glaeser, Gyourko, and Saks write that housing supply “constraints do not appear to be caused by a declining availability of land, but rather they are the result of a changing regulatory regime that makes large-scale development increasingly difficult in expensive regions of the country” (2005b, 329). However, the quantitative evidence is mixed; while some research shows land-use regulations are becoming more restrictive (Furman 2015; Herkenhoff, Ohanian, and Prescott 2018), other research demonstrates this may be true in some places but is not a trend everywhere (Pendall et al. 2018). Although data on local residential land-use regulations could inform policy decisions, few national studies of land-use regulations have been conducted. Land-use authority and practices are hyperlocal and change over time, making them difficult to analyze at the national level.

What Is the National Longitudinal Land Use Survey?

The NLLUS aims to help fill that gap in national survey data. It captures a wide array of residential land-use practices from across the US over the past 25 years. Rolf Pendall launched the survey in 1994 and ran it again in 2003. In 2019, the Urban Institute partnered with Pendall to field the survey a third time. This partnership ensured consistency with previous surveys while allowing researchers to update the survey instrument and methodology.

All three rounds of the survey used state-of-the-art practices; the 2019 iteration included a digital survey platform and the use of web-scraping for contact information. Using the American Association for Public Opinion Research’s most conservative standard, which includes completed surveys only, the

2019 response rate was 49.6 percent (1,538/3,100). The alternative rate, which includes partial completes, was 55 percent (1,703/3,100). These response rates compare well with those from 1994 and 2003, when 77 and 65 percent of jurisdictions (using the standard that includes partial completes), respectively, responded to the survey.

Topics Covered in the NLLUS

All three surveys (1994, 2003, and 2019) include questions on six topics:

- maximum residential zoned density (allowable number of units per acre)
- permissions for low- to mid-density multifamily development
- growth limits (e.g., urban growth boundaries, population growth rate or building permit restrictions, moratoria)
- impact fees and adequate public facilities ordinances
- inclusionary zoning requirements (e.g., whether and what percentage of market-rate unit developers are required to reserve for low-income households)
- affordable housing incentives and supports (e.g., bonus density, streamlined permitting, affordable housing trust funds)

The 2019 NLLUS includes new questions on nine other topics:

- permissions to site specific kinds of low-cost stand-alone homes (e.g., manufactured housing, mobile homes, tiny homes, recreational vehicles)
- minimum dwelling unit sizes (in square feet)
- accessory dwelling units (e.g., in-law units, English basements)
- off-street parking requirements (number of parking spots per multifamily unit)
- inclusionary zoning thresholds (i.e., how many market-rate units a developer can build before being required to provide affordable units) and total units built
- affordable housing design standards (e.g., whether affordable units are required to have the same design standards or be built on the same location as market-rate units)
- affordable housing trust fund revenue sources (e.g., federal sources or general fund obligations)
- external government agency involvement in residential development assessment (e.g., through environmental impact review)
- self-reported changes in single- or multifamily zoned land or permitting time, fees, and processes

These data represent the first-ever longitudinal national dataset on land-use regulations and practice going back 25 years. They complement other available data—such as the Wharton Residential

Land Use Index (Gyourko, Saiz, and Summers 2006), the Turner Center California Land Use Survey (Mawhorter and Reid 2018), and the National Association of Home Builders' 2017 Construction Cost Survey (Ford 2017)—that cover similar topics around residential land-use regulations but are not available longitudinally or nationally.

Creating the NLLUS

To determine the universe of potential respondents, the research team first needed to identify which political jurisdictions in the US have the authority to regulate land use (figure 1). In most states (like Florida or Washington), counties regulate land in unincorporated areas, while in other states (like Ohio or Illinois), counties and townships may yield unincorporated area zoning authority to each other on a case-by-case basis. New England states, in contrast, have no unincorporated land; all land is zoned (and governed) by municipalities. For this reason, we determined the appropriate level(s) of government to include for each state, which resulted in a list of land use-empowered jurisdictions at three census summary levels: county, subcounty, and incorporated place.¹







The 2019 survey's universe consists of the following:

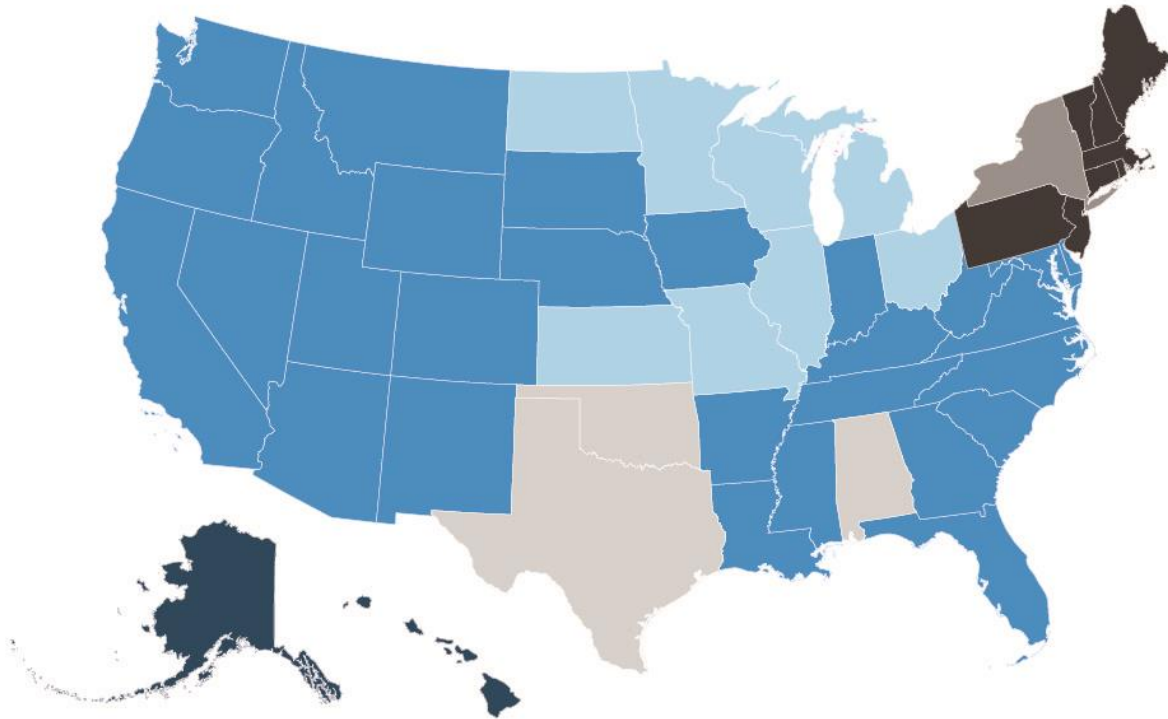
1. all jurisdictions with planning power and populations of at least 10,000 in the 50 largest core-based statistical areas (CBSAs) within the US as of 2014;²
2. jurisdictions surveyed in 2003 and 1994 located outside 2019's 50 largest CBSAs and/or with populations below 10,000; and
3. samples of jurisdictions with populations below 10,000 in the Minneapolis-St. Paul, Cincinnati, and Chicago CBSAs.

Our research team did not know the names or contact information for land-use planning experts in each jurisdiction, so we generated a prioritized list of job titles of people we would expect to be most knowledgeable. Working from that list, we used web scraping to search for the name and email address for the best possible contact for each jurisdiction. Researchers worked with data science experts to design an algorithm that drilled down from the jurisdiction website, to the department, to the name of the most senior planning official. During the pilot study, the team developed and revised the algorithm to improve its capabilities. It identified 3,100 contacts for the survey. Where the 2003 and 1994 surveys had been mailed out in paper form, the 2019 iteration used these machine-gathered email addresses and an online survey platform to collect responses.

FIGURE 1

Zoning Authority Arrangements by State

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|  Counties or boroughs zone all land unless they cede power to municipalities. |  County subdivisions (equivalent to townships) zone all land. |
|  Counties zone unincorporated areas. Municipalities zone their own land. |  Towns zone all unincorporated land. Other municipalities zone their own land. |
|  Counties and/or townships zone unincorporated areas. Municipalities zone their own land. |  Counties can't zone or must meet requirements to zone. Municipalities zone their own land. |



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Source: Authors' analysis of state government statutes and secondary research.

About the NLLUS Data

The NLLUS comes in three individual-survey-year files (1994, 2003, and 2019) and one longitudinal file. The 1994 and 2003 datasets were developed by Rolf Pendall. Table 1 shows the number of respondents who participated in a single year, two years, or all three years. Different jurisdictions responded to the survey over the three iterations. All jurisdictions that responded to the survey in either 1994 or 2003 were contacted again for later rounds. Table 2 shows the total unique respondents based on which years they answered the survey.

TABLE 1

Respondents across NLLUS Years

Survey dataset	Respondents
1994 NLLUS	1,168
2003 NLLUS	1,845
2019 NLLUS	1,703
<i>Longitudinal NLLUS</i>	
1994 and 2003	742
2003 and 2019	1,034
All three years	446

TABLE 2

Respondent Totals Over Survey Years

	One Year			Two or Three Years				Total unique respondents
	1994	2003	2019	1994 and 2003	1994 and 2019	2003 and 2019	1994, 2003, and 2019	
Respondents	218	515	461	296	208	588	446	2,732

The longitudinal dataset includes a comparable set of roughly 50 variables that have been standardized across all years, as well as all the original variables from all three survey datasets. The longitudinal dataset also attaches jurisdictions' census data to their records. Comparable or standardized variables have a letter grade according to the degree of consistency among the surveys:

- For A-grade variables, the wording for both the questions and answers was the same across survey iterations.
- For B-grade variables, the wording of the questions or answers may have changed slightly over the years, but it is still directly comparable.
- For C-grade variables, the wording or context of the questions and answers differed enough across years that these variables should be compared only qualitatively and not used for quantitative analyses.

Considerations for Using NLLUS Data

Data from the NLLUS can be used to understand land-use practices across the US and over time. Given the range of land-use planning topics covered in the survey, these data might be used to analyze

- whether land-use regulation varies across different jurisdiction types;
- whether changes in regulations are associated with changes in demographics, income, or zoning changes in neighboring jurisdictions;
- the relationship between regulations and housing production;

- the relationship between how unified or granular regulatory authority over land use is in a region and the provision of land-based public goods (e.g., green space, density, and affordable housing); and
- how local land-use regulations are used to finance infrastructure and public goods, and whether they change over time.

Users should keep the following factors in mind when using the NLLUS:

Responses should not be used to characterize entire metropolitan areas without accounting for jurisdictions that did not receive or respond to the survey. The NLLUS is a hybrid between a census (localities with populations of at least 10,000) and a sample (in some metropolitan areas, localities with populations below 10,000). The jurisdictions that were not surveyed or did not respond likely differ systematically from the average respondent because they had lower staff capacity, their practices did not square easily with standard responses, or they did not want to report their practices. NLLUS data best reflect land-use practices in metropolitan areas where most land-use decisionmaking jurisdictions have at least 10,000 residents and where most of these jurisdictions responded. The data depart most significantly from a representative picture in metropolitan areas where response rates were low and where localities with fewer than 10,000 residents account for a large proportion of regional population and land area. (See the NLLUS user guide for more information.)

Comparisons should be restricted to jurisdictions of a similar type. Users should limit comparisons and analyses to jurisdictions of a similar type (i.e., incorporated places, county subdivisions, or counties), though cross-type comparisons may be made where jurisdictions have documented similar planning powers. For example, county subdivisions in Connecticut play a similar role to municipalities in other states.

The NLLUS does not include land-use practices in most small areas in the US. The survey focused on the most populous 25 (in 1994) or 50 (in 2003 and 2019) CBSAs, so it does not reflect land-use practices in smaller CBSAs.

When analyzing trends over time, only the graded variables should be used. The 2019 data can be used with similar data collected in 1994 and 2003 to trace the evolution of practices over the past quarter-century. Some elements of the survey data collected in 1994 and 2003 align with the 2019 survey, and those have been made available in a longitudinal file. However, we recommend using only the longitudinal variables with a quality grade when tracing trends over time. Ungraded variables should be compared only with extreme caution.

Notes

¹ Census-designated counties include counties and parishes in Louisiana. Subcounties include townships and, in New England and New York, towns and sometimes municipalities or cities. Places include incorporated units, which are mainly cities, villages, boroughs, and towns outside New England and New York. Census places (at the 160 summary level) also include unincorporated places that are generally called census-designated places,

where land-use regulation is governed by the relevant county, parish, town, or township. See appendix A of the NLLUS user guide for a detailed discussion of which levels of government hold zoning authority in which states.

- ² A core-based statistical area (CBSA) is a US geographic area defined by the Office of Management and Budget that consists of one or more counties (or equivalents) anchored by an urban center of at least 10,000 people plus adjacent counties that are socioeconomically tied to the urban center by commuting.

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