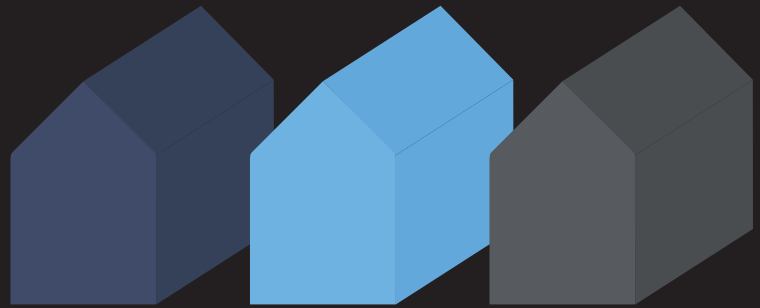




Maryland Housing Needs Assessment Update

A shared framework for the Maryland Department of
Housing and Community Development and local partners

Analysis of Housing Production and Zoning Capacity

Summer 2025

Prepared by the National Center for Smart Growth
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Analysis of Housing Production and Zoning Capacity

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I. Executive Summary

In this update to the 2020 Maryland Housing Needs Assessment—the first in a series of four reports—the National Center for Smart Growth (NCSG) analyzes the regulatory landscape within Maryland to determine which laws and regulations impact housing production, compares this regulatory landscape to neighboring states, analyzes recent trends in housing production, and analyzes the capacity of zoning to accommodate the state’s projected housing growth to the year 2045.

The report shows that housing production in Maryland is significantly shaped by its regulatory landscape. Known nationally for its “Smart Growth” policy framework¹, the state of Maryland coordinates land use policy with local jurisdictions by enabling a variety of local land use practices and incentivizing regulatory actions that direct growth into designated “Priority Funding Areas.” Compared to surrounding states in the D.C.-Maryland-Virginia (DMV) region, Maryland’s counties tend to rely on a wider variety of local land use practices other than zoning to shape land use.

Summary of Major Findings:

- Maryland’s regulatory landscape has been shaped by its distinctive Smart Growth planning framework and home rule provisions that give counties the flexibility to pursue a range of land use policy approaches, in addition to traditional zoning. This is a blessing and a curse, as many of the most popular land use policies that supplement traditional zoning, such as adequate public facilities ordinances and urban containment policies, have also been shown to inflate housing costs.
- Maryland’s cities and towns have the most restrictive land use practices in the DMV region, based on national survey data.
- Aside from a spike in 2022, housing production has not notably increased since the onset of the COVID-19 pandemic, and single-family housing production has gradually declined. Maryland will need approximately 590,186 new units to accommodate projected household growth through 2045, yet the recent pace of construction has been too slow to accommodate this many households.
- Due to a mismatch between the gross acres needed for growth and the zoned capacity to accommodate growth, Maryland currently has an oversupply of land zoned for low-density development and an undersupply of land zoned for higher-density development. While Maryland has more than enough land to accommodate single-family housing unit growth through the year 2045, the state currently has a shortage of land

¹ “The Maryland Sustainable Growth Subcabinet,” Maryland Department of Planning, accessed March 26, 2025, <https://planning.maryland.gov/Pages/OurEngagement/SGSubcabinet/smart-growth-subcabinet.aspx>. As of May 2024, Maryland Department of Planning began shifting “smart growth” language to “sustainable growth”, marking a focus on “the broader future of sustainable growth that balances environment, economy, and equity by planning where we grow, how we grow, and who we build for with vitality and resilience in mind”

to accommodate high-density housing developed at densities of 10 units per acre or more.

These findings point to a need to revisit local land use practices to ensure that enough land is available to accommodate the types of housing units that Marylanders are likely to prefer in the years to come, given the demographic changes noted in the *Housing Gaps* and *Housing Needs Assessment of Older Adults* reports of the 2025 Maryland State Housing Needs Assessment. These include an increasing older adult population, older adults experiencing housing cost burdens, and housing shortages across tenure types and income groups, but particularly for the lowest-income renters. These findings also suggest that zoning reforms that focus on particular housing types in areas where zoned land supply is scarce, yet demand is high—particularly in Priority Funding Areas, moderate-density single-family districts in the state’s metropolitan counties, and high-density residential districts in areas served by transit—are especially needed to accommodate housing growth.



County	Charter/Non-Charter	Form of Government
Allegany	Non-charter	Code Home Rule
Anne Arundel	Charter	Charter Home Rule
Baltimore City	Charter	Charter Home Rule
Baltimore	Charter	Charter Home Rule
Calvert	Non-charter	Commission
Caroline	Non-charter	Code Home Rule
Carroll	Non-charter	Commission
Cecil	Charter	Charter Home Rule
Charles	Non-charter	Code Home Rule
Dorchester	Charter	Charter Home Rule
Frederick	Charter	Charter Home Rule
Garrett	Non-charter	Commission
Harford	Charter	Charter Home Rule
Howard	Charter	Charter Home Rule
Kent	Non-charter	Code Home Rule
Montgomery	Charter	Charter Home Rule
Prince George's	Charter	Charter Home Rule
Queen Anne's	Non-charter	Code Home Rule
St. Mary's	Non-charter	Commission
Somerset	Non-charter	Commission
Talbot	Charter	Charter Home Rule
Washington	Non-charter	Commission
Wicomico	Charter	Charter Home Rule
Worcester	Non-charter	Code Home Rule

Table 1. List of Counties By Charter Status and Form of Government
Source: Maryland Association of Counties (2023). County Government Structure.
<https://mdcounties.org/DocumentCenter/View/5449/2023-NEOO---Co-Government-Structure?bidId=>

II. Introduction

This report is the first in a series of reports produced by the National Center for Smart Growth (NCSG) for the Maryland Department of Housing and Community Development (DHCD). In this report, Analysis of Housing Production and Zoning Capacity, NCSG analyzes the regulatory landscape within Maryland to determine which laws and regulations have the most significant impact on housing production, compares this regulatory landscape to neighboring states, analyzes recent trends in housing production within Maryland, and analyzes the capacity of zoning to accommodate the state's projected housing unit growth to the year 2045. This report is not designed to be a comprehensive update to the various data and indicators provided in the 2020 Housing Needs Assessment, nor does it provide a policy plan or menu of policy options. The main objective of this document is to report on updated data, provide new data, and offer conclusions based on the data analysis. We use national land use regulation survey data, state building permit data, statewide zoning data, U.S. Census data, and state household projections to better understand the opportunities and challenges related to housing production.

The report points to three key challenges facing the state as it prepares to accommodate new housing growth over the next 20 years:

- **Certain features of Maryland's regulatory landscape may limit the state's ability to accommodate housing growth.** An index of zoning restrictiveness indicates that Maryland's municipal land use regulations are the most restrictive in the DMV region, followed by D.C. and Virginia. While Maryland's county zoning ordinances tend to be more permissive than Virginia county ordinances, Maryland counties tend to supplement zoning with a variety of additional regulatory tools that may negatively impact housing supply. Maryland's urban containment policies

are rarely adjusted to accommodate new housing growth, and Maryland's Adequate Public Facilities Ordinances (APFO) often act as moratoria on new housing growth.

- **Housing production in Maryland is not keeping pace with rising housing demand.** While this analysis covers the time period from 2020–2024, it's important to note that since 2008, the state has been producing housing units at a pace that is too slow to accommodate projected housing demand through the year 2045. This shortfall is primarily due to the sluggish recent pace of single-family housing construction.
- **Maryland currently does not have enough zoned land to accommodate high-density housing.** While the state as a whole has a surplus of land zoned to accommodate housing development constructed at low-density rural and residential use categories, the supply of land declines as density ranges increase. Due to a mismatch between the gross acres needed for growth and the zoned capacity to accommodate growth, Maryland currently has an oversupply of land zoned for low-density development and an undersupply of land zoned for higher-density development. Much of this land zoned for low-density development is located in areas that are distant from employment opportunities. Within the highest density category, the state currently has a shortage of 1,970 acres that need to be upzoned to high density to accommodate housing growth through the year 2045.

This report is structured as follows. The next section (Section III) provides information about the regulatory context of housing production in the state of Maryland. Section IV analyzes the stringency of regulatory restrictions on housing production within Maryland and surrounding states. Section V discusses the methodology used to analyze housing production trends and zoning capacity, and Section VI presents the results of these analyses. Section VII offers conclusions and policy implications. Note that some sections may reference tables and figures in the Appendix.



III. Land Use Regulations and Housing Production in Maryland

Planning frameworks are an essential decision-making tool for state and local governments, providing guidance, regulations, and structure to the overall development process. These documents often lay out the technical specifications permitted at a range of geographies, and are an essential mechanism for balancing the need for a clear regulatory framework without hindering the development process.² The content and character of local land use regulations in Maryland are shaped to a large extent by state laws that establish the framework for local planning and zoning and enable specific land use practices. In this section, we describe the state laws that play the most important role in shaping local planning and regulatory practices and then discuss several commonly used local regulatory tools that influence housing production in Maryland.

State Legislation

The legal basis for local planning and land use regulation in Maryland is outlined in the Local Government Article and Land Use Article of the Annotated Code of Maryland. The structure of local county governance in Maryland determines which of these laws authorizes local land use practices. "Charter" (also referred to as "charter home rule") counties are those that have a form of "home rule," which refers to a broad grant of local authority that is outlined in the county's charter. Non-charter counties include both "code" counties and "commissioner" counties.

Code (also referred to as "code home rule") counties also have a form of home rule but local legislative powers are not defined by a county charter. The remaining counties are governed by a "commissioner" form of government and have more limited powers to enact laws not expressly authorized by the Maryland General Assembly.

Division I of the Land Use Article delegates planning and land use regulation authority to non-charter counties and cities (see Table 1 for a summary of charter and non-charter counties and cities), including Baltimore City. For the remaining local governments within the state, including the nine charter counties and six code counties, planning and land use authority is outlined in Section (i), Title 10 of the Local Government Article.

In addition to these laws that establish the framework for local planning and zoning, the Maryland General Assembly has also passed several laws that define its distinctive approach to coordinated statewide planning, historically referred to as "Smart Growth", with a more recent shift towards "Sustainable Growth" language.³ The following laws establish the basic elements of the Maryland statewide planning framework:

1992 Economic Growth, Resource Protection, and Planning Act. This law establishes seven⁴ state growth visions and requires local governments to revise local comprehensive plans to meet these goals.

² Some research shows how certain regulations, such as "by-right approvals" can speed up the development process but can also be used as a tool to launch litigation in instances where there may be violations to state laws, delaying the development process or particular projects (see Millard-Ball, A. (2021). Planning as Bargaining: The Causal Impacts of Plans in Seattle and San Francisco and Manville, M., et al. (2022). Does Discretion Delay Development? The Impact of Approval Pathways on Multifamily Housing's Time to Permit in the Journal of the American Planning Association.)

³ Sustainable Growth Subcabinet and Repeal of the Office of Smart Growth, Md.Laws, Chap. 92 (2024). https://mgaleg.maryland.gov/2024RS/chapters_noln/Ch_92_sb0309T.pdf. In April 2024, Maryland passed HB225/SB309 changing the state's Smart Growth Subcabinet to the Sustainable Growth Subcabinet continuing its shift from "smart growth" to "sustainable growth".

⁴ Seven visions were established in the original act, and an eighth one was added in 2000. The 2009 Planning Visions law increased this number to 12.

1997 Smart Growth and Neighborhood Conservation Act. This law establishes the basic elements of the state's Smart Growth program. Of the program's five different elements, two have played important roles in shaping the location of urban development within the state. Priority Funding Areas (PFAs) are designated zones where certain "growth-related" state capital investments are to be directed. PFAs are designated by counties and include all cities, towns, and other areas that meet minimum requirements for water/sewer suitability and density. The Rural Legacy Program is a land preservation initiative that redirects state funds into a land dedication program designed to limit the impacts of urban sprawl on agricultural lands and natural resources.

2009 Smart and Sustainable Growth Act. This package of laws expands the number of state planning visions to 12, requires the state to collect smart growth indicators for the purpose of monitoring progress towards the state's smart growth visions, and clarifies the relationship between local comprehensive plans and local land use regulations.

2012 Sustainable Growth & Agricultural Preservation Act. This law is designed to reduce pollution of the Chesapeake Bay and other waterways by limiting the proliferation of private septic systems in new residential subdivisions. It requires local governments to develop "growth tiers" in collaboration with the state that establish criteria for public and private sewer systems.

In addition to these laws, the Maryland General Assembly has recently enacted laws that directly address housing affordability and supply. These include:

2019 Housing Element Law. This law requires local governments to include a housing element as part of their local comprehensive plans.

2024 Housing Expansion & Affordability Act. This law, passed as part of a package of three laws that each address housing affordability in Maryland, provides density bonuses for projects that contain affordable housing and are near transit. The law also provides density bonuses for affordable housing developments located on formerly state-owned properties and on properties developed by nonprofits. The law also limits the number of public hearings required for project approval and requires cities and counties to allow manufactured housing in zoning districts that allow single-family residential uses.

Local Land Use Regulations

Local governments in Maryland have adopted a variety of local planning tools that shape the extent, timing, location, and affordability of housing. The following tools are particularly important in shaping housing production within Maryland:

Zoning Reforms. Several local governments in Maryland have recently taken steps to revise zoning ordinances to facilitate the expansion of housing supply. For example, Montgomery County is currently engaged in a multi-year effort to revise its zoning categories to allow for a wider range of "missing middle" housing options—including the duplexes, triplexes, and townhouses—to be constructed in areas zoned exclusively for single-family detached housing units. Baltimore County recently passed a law that allows for the designation of new mixed-use overlay zoning districts that permit a variety of housing types along with nonresidential uses. The City of Annapolis permitted the construction of Accessory Dwelling Units (ADUs) on residential lots in 2021. With the recent passage of the 2024 Housing Expansion & Affordability Act, we are likely to see an increase in these types of zoning reforms as local jurisdictions revamp zoning policies to comply with the law's new density provisions. At least one jurisdiction (Anne Arundel County) has already changed policy to allow duplexes as part of its new Housing Attainability Act.

Inclusionary Zoning. Several Maryland local governments rely on inclusionary zoning to promote the private-sector production of housing that is affordable to low-income households. Under inclusionary zoning, housing developers are required (or encouraged) to provide a defined number of affordable homes as a percentage of all new homes built. In exchange for compliance with this provision, housing developers typically receive a density bonus. According to recent research by the Grounded Solutions Network, eight local jurisdictions in Maryland have inclusionary zoning programs in place.⁵ These include Annapolis, Charles County, Frederick County, Frederick City, Gaithersburg, Howard County, Montgomery County, and Rockville. In addition to the ones identified by Grounded Solutions, Baltimore City has operated an inclusionary zoning program for a number of years, and Anne Arundel County recently passed the Housing Attainability Act, which requires large new housing developments with 20 or more units to allocate at least 10% of homeownership units and 15% of rental units as affordable to moderate income households. Queen Anne's County also established a Moderately Priced Dwelling Unit (MPDU) Program, aimed at providing affordable housing to households earning 80% of the median income. The program provides affordable loan financing for new homeowners, as well as a limited number of affordable rental units.

Urban Containment Policies. These policies are designed to limit urban sprawl by differentiating areas designated for future growth from areas where future growth is to be limited. Urban containment policies achieve this goal through one of several different mechanisms. Urban service areas, such as the Urban-Rural Demarcation Line (URDL) in Baltimore County, limit growth to areas designated for current and/or future

urban infrastructure provision. Other counties, such as Anne Arundel County and Prince George's County, rely on zoning to achieve the same objective by designating areas outside of major urban areas with open space, agriculture, and/or very large-lot residential zoning categories. Montgomery County combines the large-lot zoning urban containment approach with a Transfer of Development Rights (TDR) program that allows landowners in areas designated for land preservation to sell their development rights to those seeking to develop land within areas designated for urban growth.

Adequate Public Facilities Ordinances (APFOs). Also known in other states as "concurrency" programs, APFOs are policies that aim to coordinate the timing of growth with the provision of infrastructure. To establish an APFO, the local government begins by establishing a thorough list of all facility improvements that will be needed to provide public services to a projected future population at a given Level of Service (LOS) standard. When a developer applies for a building permit or subdivision approval, the impacts of the development proposal on the LOS of each affected infrastructure system are then evaluated. Developments whose impacts lower the LOS below the established standard are either denied a permit or are approved only if the developer agrees to provide the facilities needed to raise the LOS up to the standard. APFOs are widely used throughout Maryland, particularly in the state's metropolitan counties. As of 2024, 14 Maryland counties had APFOs governing the provision of one or more of the following public infrastructure systems/services: schools, roads, water, sewer, stormwater drainage, health care, fire, police, solid waste disposal.⁶

⁵ Grounded Solutions Network. (n.d.). Inclusionary Housing Map & Program Database. Accessed March 26, 2025 <https://inclusionaryhousing.org/map/>.

⁶ Maryland Department of Planning, 2024

Land Use Regulations and Housing Affordability

We conclude this section by briefly reviewing what is known (and what is not known) about the effect of each of the tools mentioned in the previous section on housing supply and housing affordability.

Zoning Reforms

Zoning reforms such as those mentioned above are becoming popular in cities and counties around the nation as a way to address housing affordability, but given that most such reforms are quite recent, there has not been enough time to fully evaluate their long-term impacts on housing supply and affordability. The existing research finds that increases in housing supply slow regional rent inflation, and in some cases, slow rent growth in areas adjacent to where new supply is added.⁷ Zoning reforms that allow increased housing production have been shown to increase housing supply, and improve affordability, but this conclusion comes with a few caveats. The impact of zoning reforms on housing prices will likely vary by market (and sub-market) demand, local housing market context, the types of homes affected, and the timing of reforms relative to demand upsurges and downswings.⁸ While zoning reforms may immediately increase the allowable density on upzoned lots, it takes time for the market to respond to that change and add units to the housing stock. Furthermore, there may be differences between the short-term and long-term effects on housing affordability, as well as differences between sub-markets in the same regional housing market. Although upzonings are often followed by new additions to the housing stock, those additions often only satisfy a portion of the regional demand

for housing, particularly when zoning remains restrictive outside the upzoned area.⁹ This explains why residential land prices may increase, rather than decrease, immediately following the relaxation of zoning restrictions.¹⁰ Recent research has also shown that upzoning can spur gentrification and displacement in the short-term, particularly within low-income and minority neighborhoods.¹¹

While the impacts of upzoning are influenced by the factors mentioned above, numerous studies have shown that more restrictive zoning, or downzoning, tends to drive up rents and reduce the housing supply for low- and middle-income households.¹² Although loosening zoning restrictions alone may not be enough to substantially increase affordable housing options for low-income households, downzoning or maintaining restrictive zoning policies generally worsens housing affordability for these groups.¹³

Overall, the evidence on the relationship between upzoning and affordability is nuanced and market-specific but emphasizes that restrictive zoning is not conducive for improving affordability levels, and upzoning may improve affordability if sufficient land is made available to accommodate rising housing demand.

Inclusionary Zoning

While inclusionary zoning seems to be a straightforward way to expand the supply of new affordable homes, the effect of inclusionary zoning on housing affordability is not as straightforward as it may seem. While evidence suggests that inclusionary zoning has helped to expand the supply of new affordable units, inclusionary zoning has also been shown to increase the price of homes not subject

7 Donovan and Maltman, 2025; Pennington, 2021; Been, Ellen, and O'Regan, 2025

8 Freemark, 2023

9 Been, Ellen, and O'Regan, 2025

10 Freemark, 2020

11 Kim and Lee, forthcoming, 2024

12 Stacy et al., 2023

13 Stacy et al., 2023

State	Median Housing Value (\$s, Owner-Occupied Units)	Median Gross Rent (\$s, Occupied Rental Units)	% of Renters with Housing Cost Burden ≥30%	% of Owners (with a Mortgage) with Housing Cost Burden ≥30%
DC	715,500	1,904	45%	24%
DE	359,700	1,358	52%	26%
MD	413,600	1,651	53%	27%
NJ	461,000	1,667	51%	32%
PA	259,900	1,197	49%	24%
VA	382,900	1,567	49%	25%
WV	163,700	850	47%	20%

Table 2. Regional Housing Cost Comparisons, 2023

Source: U.S. Census Bureau, U.S. Department of Commerce. "Comparative Housing Characteristics." American Community Survey, ACS 1-Year Estimates Comparison Profiles, Table CP04, 2023, [https://data.census.gov/table/ACSCP1Y2023.CP04?q=housing+costs&t=Housing+Value+and+Purchase+Price&g=010XX00US\\$0400000&y=2023](https://data.census.gov/table/ACSCP1Y2023.CP04?q=housing+costs&t=Housing+Value+and+Purchase+Price&g=010XX00US$0400000&y=2023). Accessed on March 7, 2025.

to the inclusionary zoning requirement.¹⁴ Inclusionary zoning may also reduce the availability of moderately priced rental units within housing developments that are subject to an inclusionary zoning requirement if developers attempt to recoup lost profits by raising rents on market-rate units not subject to the inclusionary zoning requirement.¹⁵

Urban Containment

The impact of urban containment policies on housing affordability has been the subject of considerable research. The largest takeaway from these studies is that the impact of urban containment programs on housing supply and affordability largely depends on

design features, such as the amount of land within the urban boundary that is available to accommodate new housing development, the stringency of local land use regulations within and outside the boundary, and whether the boundary is modified over time to accommodate projected housing growth. Static urban service areas such as the Baltimore County URDL and fixed open-space and large-lot zoning districts such as those in Montgomery County and Anne Arundel County are more likely to constrain housing supply and inflate housing prices than dynamic urban containment boundaries—such as the Portland, Oregon, urban growth boundary—which can be adjusted over time

¹⁴ Schuetz, Meltzer, and Been, 2011

¹⁵ Dawkins and Moeckel, 2016

State	Max # of Dwelling Units/ Net Acre (County Avg.)	Zoning Allows 40-Unit, 2-Story Apts. on Vacant 5-Acre Parcel (% of Counties)	Inclusionary Zoning Reqs. (% of Counties)	Urban Containment Policies (% of Counties)	APFOs (% of Counties)	Zoning Restrictiveness Index (City/Town Avg.)
MD	3.90	0.90	0.44	0.89	0.89	2.05
VA	2.71	0.73	0.05	0.62	0.10	1.68
DC	5.00	1.00	1.00	0.00	0.00	1.85

Table 3. Local Land Use Practices in Maryland, Virginia, & D.C.
Sources: 2019 National Longitudinal Land Use Survey and 2023 National Zoning and Land Use Database

to accommodate population growth.¹⁶

Adequate Public Facilities Ordinances (APFOs)

As with urban containment programs, the effect of APFOs on housing affordability largely depends on program design features. If public infrastructure is made available concurrently with new growth, APFOs can actually improve housing development outcomes by reducing the uncertainty associated with public infrastructure provision. If, on the other hand, public infrastructure is not provided concurrently with new growth, the APFO effectively acts as a building moratorium that limits growth and constrains housing supply.¹⁷ While some

counties in Maryland have recently revised APFOs to exempt affordable housing projects from APFO requirements, APFO-imposed moratoria continue to be a problem. One report found that between 2016 and 2021, seven Maryland counties imposed housing moratoria due to school capacity constraints.¹⁸ In 2024, Baltimore County made changes to their APFO, placing more stringent requirements on developers proposing projects in overcrowded school districts. The impacts that APFOs have on housing in Maryland may be more widespread than what is captured above, as it is possible that jurisdictions experience impacts on housing but do not report them.

¹⁶ Dawkins and Kim, 2022; Nelson, et al., 2004

¹⁷ Nelson, et al., 2004

¹⁸ Maryland Department of Housing and Community Development, n.d.

IV. Local Land Use Practices in Maryland and Surrounding States

We begin the analysis of land use practices in Maryland and surrounding states with a regional housing cost comparison. Table 2 compares Maryland with the surrounding states of Delaware, the District of Columbia, New Jersey, Pennsylvania, Virginia, and West Virginia along several housing cost indicators: median value of owner-occupied homes, median gross rent, percent of renters with housing cost burdens exceeding 30% of income, and percent of owners with a mortgage spending more than 30% of income on housing costs. These data were obtained from the 2023 1-year American Community Survey.

As Table 2 indicates, Maryland's home values and rents are the third highest compared to other states within the surrounding region. Homeowners and renters in Maryland have comparatively higher housing cost burdens, however. Compared to surrounding states, Maryland has the highest proportion of renters with high housing cost burdens and the second highest proportion of cost-burdened owners.

To better understand the contribution of the regulatory environment to these trends, we draw upon data from two recent national surveys of local government zoning and land use regulations: the 2019 National Longitudinal Land Use Survey (NLLUS) and the 2023 National Zoning and Land Use Database (NZLD). The NLLUS is based on a 2019 Urban Institute survey of cities and counties in the 50 largest U.S. metropolitan areas and includes information on a wide variety of local land use practices. The NZLD was prepared by the Eviction Lab and relies on natural language processing methods to analyze zoning and land use regulation ordinance texts for a sample of metropolitan

cities and towns.¹⁹ We rely on the NLLUS to characterize county-level zoning and land use practices that have been shown to impact housing production. We rely on the NZLD zoning restrictiveness index, which is based on a cluster analysis of responses to a variety of questions about local land use practices, to characterize the overall regulatory environment within cities. We rely on these data to characterize land use practices in D.C. and within counties, cities, and towns in Virginia and Maryland. Within Virginia, our sample includes 30 counties and 35 cities and towns. Within Maryland, our sample includes 10 counties and 20 cities and towns. We chose not to include West Virginia and Delaware in our analysis due to the small number of counties in those states represented in the NLLUS and NZLD. Pennsylvania and New Jersey were also not included because counties in these states have limited authority to regulate land use.

Table 3 summarizes the results of these analyses. As shown, Maryland lies between Virginia and DC in terms of the maximum number of dwelling units permitted per net acre, with Virginia having the most stringent dwelling unit per acre restrictions. A larger proportion of Maryland counties also permit large apartment buildings, compared to Virginia. In terms of the other land use regulatory strategies mentioned in the previous section, Maryland counties are more likely to rely on urban containment strategies, inclusionary zoning, and APFOs, compared to Virginia counties. Ranking the overall zoning restrictiveness for cities and towns in the three states (final column in Table 3), Maryland municipal land use policies are the most restrictive, followed by DC and Virginia.

19 Mleczo and Desmond, 2023

Overall, these findings paint a mixed picture of the regulatory landscape in the DMV region. The last column in Table 3 suggests that Maryland's municipal land use regulations are the most restrictive in the DMV region. While Maryland's county zoning ordinances tend to be more permissive than Virginia ordinances, Maryland counties tend to supplement zoning with a variety of additional regulatory tools that may negatively impact housing supply and affordability. Together, these factors likely contribute to the relatively higher housing costs and housing cost burdens seen in Maryland, compared to surrounding states.

Part of the difference between the regulatory landscape in Maryland and Virginia can be explained by the availability of developable land. Virginia has more land area and a larger number of rural counties than Maryland. These rural counties face less development pressure and are less likely to adopt policies that restrict urban growth.

Another explanation for the difference between Maryland and Virginia is likely attributable to the power vested in local governments to adopt land use policies

without explicit state-enabling legislation. Virginia is known as a "Dillon's Rule" state, which means that the powers of local governments in the state are limited to those expressly granted to them by the Virginia General Assembly. If local governments in Virginia wish to adopt APFOs, for example, the Virginia legislature must pass specific enabling legislation granting local jurisdictions the power to adopt such laws. In Maryland, on the other hand, a larger number of counties enjoy a form of "home rule" autonomy which gives these counties more discretion to adopt policies that are approved by the local legislative body. As discussed previously, code and charter counties each exercise a form of home rule. In addition, the Maryland legislature has specifically enabled certain land use practices, including APFOs and inclusionary zoning, for these counties. Six counties in the state--primarily located in the state's rural regions and exurban portions of the Baltimore metropolitan area--have more limited powers under their commissioner form of government that is analogous to the power granted to counties in Virginia.

V. Housing Production Trends and Zoning Capacity: Methodology

Building Permit Analysis

To paint a picture of recent trends in housing production and the capacity of zoning to accommodate future residential growth, we perform two separate analyses. The first analysis relies on building permits data from the US Census Bureau's Building Permits Survey, compiled for the state of Maryland by the Maryland Department of Planning's (MDP) State Data and Analysis Center (SDAC). Annual reports on the authorization of new housing units are made available from 2000 onward along with quarterly reports from 2010 onward. Certain counties with limited reporting capacity (Allegany, Caroline, Dorchester, Kent, Talbot, and Worcester counties) were unable to publish monthly permit data prior to 2022, resulting in some minor differences between statewide totals and reported county totals. To improve the visual clarity of sub-state analyses, we group counties into the following sub-state regions: Baltimore (Anne Arundel, Baltimore City, Baltimore County, Carroll, Harford, Howard); Suburban Washington (Frederick, Montgomery, Prince George's); Southern Maryland (Calvert, Charles, St. Mary's); Western Maryland (Allegany, Garrett, Washington); Upper Eastern Shore (Caroline, Cecil, Kent, Queen Anne's, Talbot); and Lower Eastern Shore (Dorchester, Somerset, Wicomico, Worcester). We present line graphs that summarize the number of single-family and multi-family residential units authorized at the state level and for each of these regions for the first quarter of 2020 through the fourth quarter of 2024. We also used the US Census Bureau's Building Permits Survey to compare national and state-level trends in building permits since 2000, and these results are also presented as line graphs.

Zoning Build-out Analysis

The second analysis relies on data from several sources to conduct a zoning build-out analysis that shows the number of acres of land that are currently available to accommodate future residential growth to the year 2045. The zoning data comes from the 2020 update to the Maryland Generalized Zoning GIS layer prepared by the MDP. The Generalized Zoning layer provides a snapshot of current zoning in a way that harmonizes zoning categories across jurisdictions using consistent density category definitions. To prepare this data for the analysis, the NCSG staff performed a "union" operation in GIS to assign zoning categories to 2020 US Census blocks. The result of this operation yields an estimate of the portion of the block's area that is zoned according to each Generalized Zoning category. A similar operation was performed to estimate the percentage of each block that is "developed" or "undeveloped." To estimate developed block area, we rely on publicly available GIS data made available as part of the 2021 USGS National Land Cover Database (NLCD) and calculate the developed and undeveloped portion of each Census block.²⁰ The NLCD is created from remotely sensed Landsat data and provides detailed land cover information at a 30-meter pixel level of resolution for the continental US. Next, we collected Census block-level vacant and occupied housing unit data from the 2020 Census P.L. 94-171 Redistricting Data Summary File. After converting area units from square miles to acres, we calculate the existing residential density for each block area by dividing the number of housing units by the "developed" block area. These densities were then converted to Generalized Zoning density categories.

²⁰ These estimates were prepared by Dr. Elijah Knaap using Python scripts developed by Dr. Knaap as part of his PySAL open-source spatial analysis library. <https://pysal.org/>

To forecast the number of new housing units in 2045 by Generalized Zoning density categories, we rely on a modified version of methodology developed by Arthur C. Nelson (2004). Using the projected number of households in 2045 for the state and for each Maryland county, prepared by the MDP State Data and Analysis Center, we assume the number of 2045 occupied units to be equal to the number of 2045 households. This total household projection is then multiplied times each Generalized Zoning density category's share of 2020 occupied housing units.

The next step is to convert occupied housing unit projections into the estimated number of new housing units. To do this, we first estimate the number of 2020 units lost to demolition and obsolescence. Using estimates suggested by Nelson (2004), we assume the annual loss rate of new housing units to be 0.5%. This estimate is applied to the number of 2020 units and carried forward 25 years to arrive at the total number of units lost and total number of 2020 units remaining in the year 2045. To arrive at the number of new units, we divide the number of occupied housing units in 2045 by the 2020 occupancy rate in each density category and subtract the number of units remaining within each density category.

The final step is to compare the number of acres needed to accommodate new housing units within each density category with the actual number of available zoned acres in each density category. The estimated number of net acres needed to accommodate housing units within each density category is equal to the number of new housing units divided by the average developed residential density within each density category. This net estimate does not account for the land needed to support infrastructure serving the new housing units, so we convert net estimates to gross estimates by multiplying the adjustment factors recommended by Nelson (2004) times the net acres needed to accommodate new housing units in each density category. We then subtract this gross acreage from the estimated number of vacant acres currently

zoned for each density category to arrive at a final estimate of the surplus or shortage of land available to accommodate residential growth within each Generalized Zoning category.

The housing unit projections and zoning capacity analysis should be interpreted as a "what-if" analysis of the capacity of zoning to accommodate housing growth if current development trends and housing preferences remain stable into the future. As with any what-if analysis, there are several limitations that should be considered. First, the analysis assumes that existing development patterns are predictive of future development patterns. If preferences change, or zoning capacity changes to allow for more development, there may be more or less land available to accommodate future housing growth than our analysis would suggest. Second, we do not account for non-zoning constraints on development, such as water/sewer availability, land suitability, or conservation easement designation. Third, while existing housing is allowed to age in accordance with national estimates, our model does not explicitly account for redevelopment within existing developed areas.

Maryland Residential Building Permits, 2020-2024

<i>Residential Building Permits</i>						
<i>County</i>	Single-Family		Multi-Family		Single-Family and Multi-Family	
	<i>Total</i>	<i>% of State</i>	<i>Total</i>	<i>% of State</i>	<i>Total</i>	<i>% of State</i>
Allegany	67	0%	0	0%	67	0%
Anne Arundel	6,220	13%	1,626	5%	7,846	10%
Baltimore City	652	1%	6,872	22%	7,524	9%
Baltimore	3,451	7%	1,567	5%	5,018	6%
Calvert	925	2%	102	0%	1,027	1%
Caroline	163	0%	12	0%	175	0%
Carroll	1,563	3%	109	0%	1,672	2%
Cecil	1,232	2%	347	1%	1,579	2%
Charles	4,390	9%	862	3%	5,252	6%
Dorchester	223	0%	0	0%	223	0%
Frederick	6,924	14%	3,671	12%	10,595	13%
Garrett	711	1%	16	0%	727	1%
Harford	2,970	6%	2,721	9%	5,691	7%
Howard	3,386	7%	1,987	4%	4,773	6%
Kent	159	0%	22	0%	181	0%
Montgomery	4,915	10%	4,948	16%	9,863	12%
Prince George's	7,402	15%	6,804	21%	14,206	18%
Queen Anne's	1,461	3%	517	2%	1,978	2%
St. Mary's	266	1%	16	0%	282	0%
Somerset	1,985	4%	199	1%	2,184	3%
Talbot	532	1%	5	0%	537	1%
Washington	1,159	2%	258	1%	1,417	2%
Wicomico	968	2%	371	1%	1,339	2%
Worcester	1,105	2%	239	1%	1,344	2%
Statewide	49,445		31,687		81,132	

Table 4. Maryland Residential Building Permits, 2020 - 2024
Source: Building Permits Survey, US Census Bureau, as compiled by Maryland Department of Planning State Data & Analysis Center

VI. Housing Production Trends and Zoning Capacity: Findings

Housing Production, 2020–2024

The analysis of housing production trends begins with a look at statewide trends. Table 4 displays the number of single-family, multi-family, and total housing units permitted between 2020 and the third quarter of 2024. Figures 1 and 2 display annual trends in statewide and national housing production since 2000, Figure 3 displays quarterly trends in statewide housing production since 2020, and Figures 4 and 5 show trends in single-family and multi-family construction within the different regions of the state defined previously.

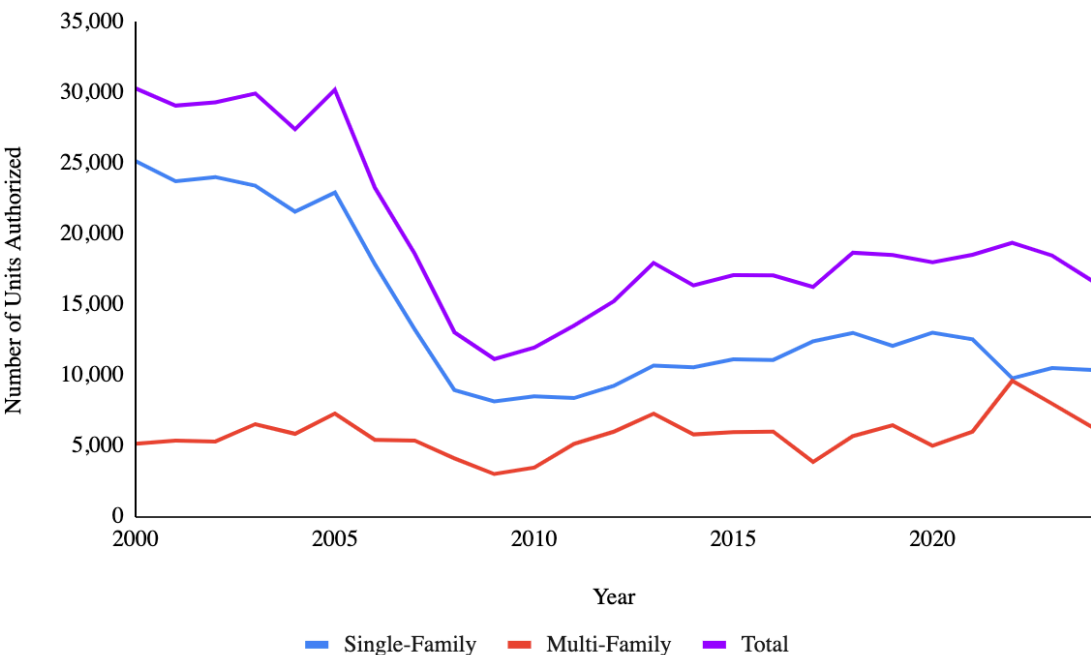


Figure 1. Residential Units Authorized for Construction in Maryland, 2000–2024
Source: Maryland Department of Planning State Data and Analysis Center

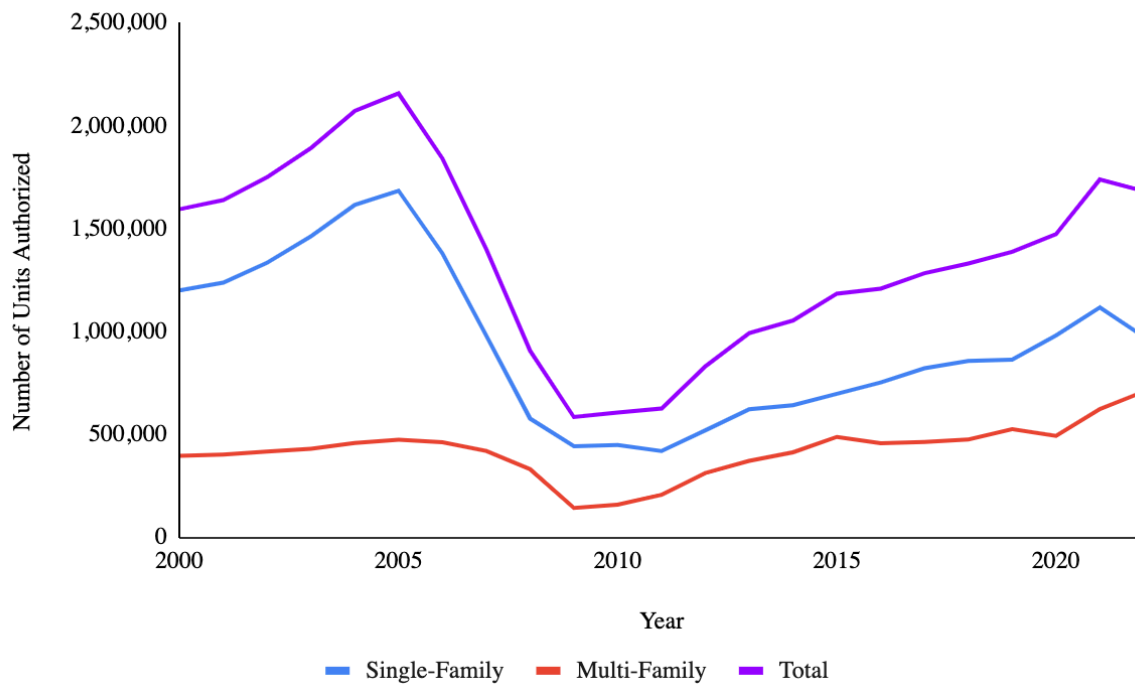


Figure 2. Residential Units Authorized for Construction Nationally 2000–2024, from the US Census Bureau's Building Permits Survey Source: US Census Bureau Building Permit Survey

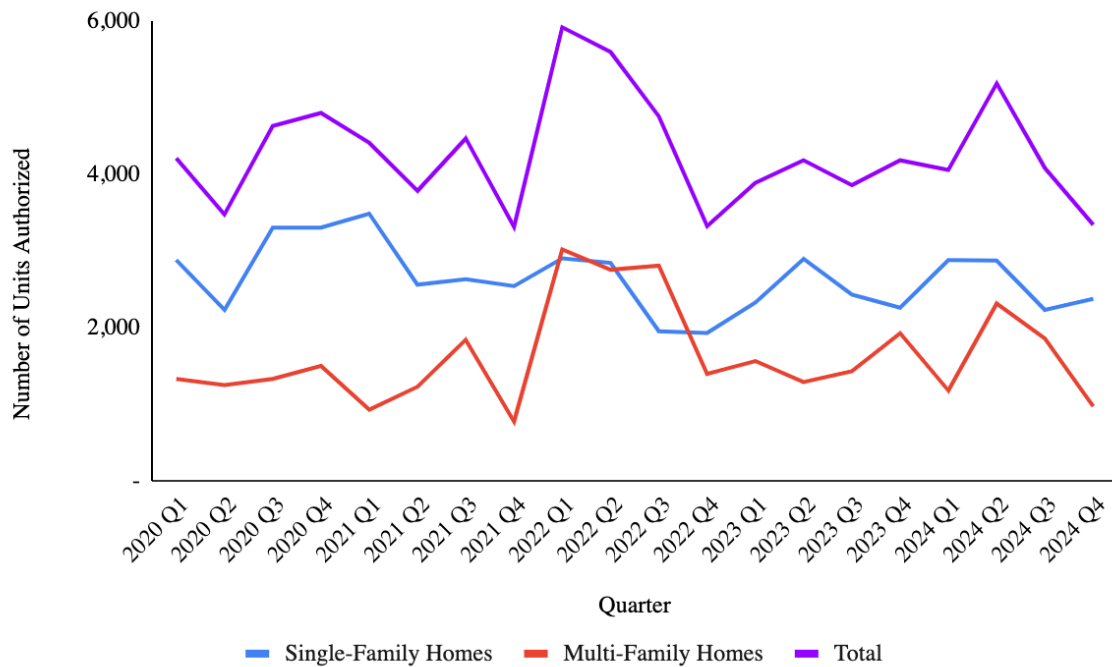


Figure 3. Residential Units Authorized for Construction in Maryland by Quarter, 2020–2024 Source: Maryland Department of Planning State Data and Analysis Center

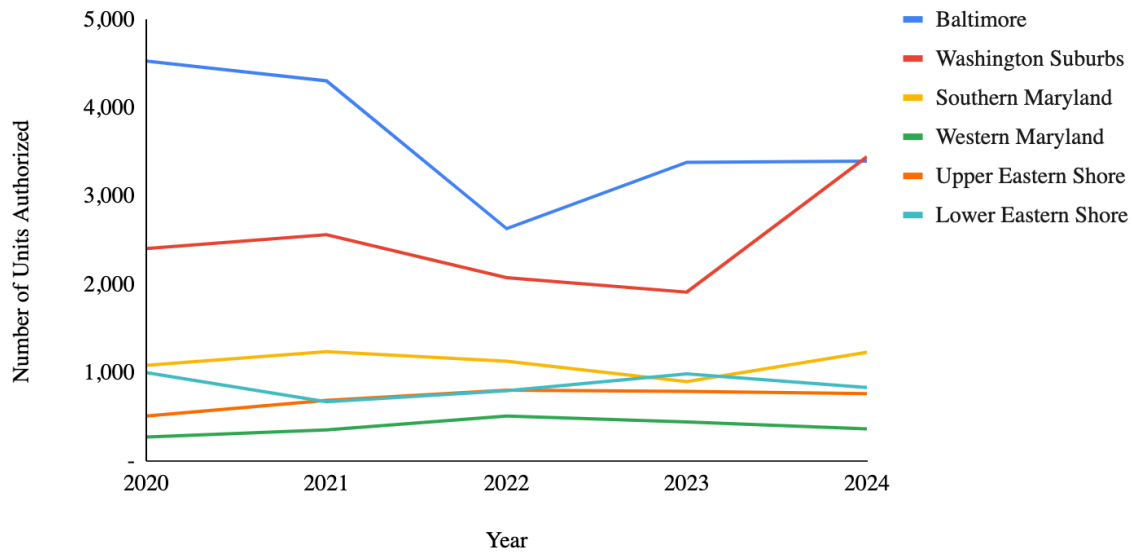


Figure 4. Single-Family Residential Units Authorized for Construction by Maryland Region, 2020-2024, from Maryland Department of Planning State Data and Analysis Center. Source: Maryland Department of Planning State Data and Analysis Center

According to Table 4, just over 81,000 housing units have been permitted in Maryland since 2020. As might be expected, housing production has been largely concentrated within the state's largest counties in and around the Washington, D.C. and Baltimore metropolitan areas. Prince George's County produced the largest number of housing units, at 14,206, while Allegany County produced the fewest, at 67. About 61% of the units produced since 2020 were single-family units. In most counties, multi-family housing production has tracked single-family production, with the exception of Charles County, which produced the fifth most single-family units but produced fewer multi-family units, and Baltimore City, which ranked first in multi-family unit production but produced far fewer single-family units. Baltimore City and Prince George's County drove the state's multi-family

housing construction over this time period, producing 22 and 21% of the state's overall new multi-family housing units, respectively.²¹

Maryland has seen similar trends in building permit authorization since 2000 as the rest of the country, with pre-Recession highs still yet to be reached, as shown in Figures 1 and 2 below. However, Maryland lags further behind than the country as a whole, with permits authorized in 2024 still being 45% below that same figure in 2000, while the number of permits authorized nationally in 2024 less than 8% below the number authorized in 2000. This can be attributed to a flat rate of growth in single-family units since the 2008 crash and much slower rate of growth in multi-family units when compared with national trends, which saw modest but notable increases in both categories of housing stock.

²¹ While Prince George's county may appear a large outlier in multi-family construction, recently approved projects such as the Westphalia Town Center, Carillon, and Beltway Plaza Redevelopment, projects all receiving approval to continue development of 2,000+ dwelling units each. More information can be found at Prince George's County Development Pipeline tracker: <https://mncppc.maps.arcgis.com/apps/dashboards/738a29d6e659451caf7853404bc52989>.

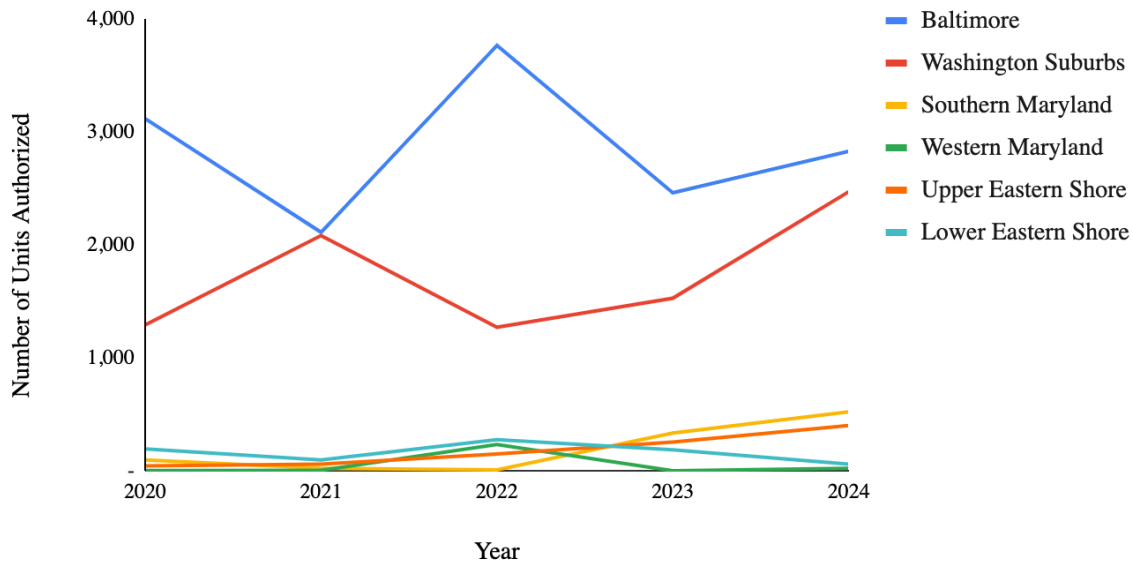


Figure 5. Multi-Family Residential Units Authorized for Construction by Maryland Region, 2020-2024, from Maryland Department of Planning State Data and Analysis Center. Source: Maryland Department of Planning State Data and Analysis Center

When analyzing residential construction activity since 2020, these trends become more clear. Figure 3 reveals notable quarterly variation but an overall flat trend in housing unit construction, as, for example, there were 4,210 total housing units authorized in the first quarter of 2020, and 4,058 total housing units authorized in the first quarter of 2024—nearly identical figures for a state with over 2.5 million total housing units.

While the overall number of housing units authorized has remained relatively stable, this is not the case when broken down by housing unit type. Specifically, the number of single-family homes permitted gradually but consistently fell on a quarterly basis from 2020 onwards. This trend is in contrast to the trend in multi-family housing construction, which has increased, driven by a notable spike in 2022 which may have led to a higher quarterly baseline in 2023 and 2024. As shown in Figure 3 below, there were actually more multi-family homes approved than single-family homes in the first and third quarters of 2022, and

there were only 375 more single-family homes approved than multi-family ones in the third quarter of 2024, a significant decline from the difference of 1,976 units in the third quarter of 2020. One possible explanation for the 2022 spike in multi-family housing construction is that the decline in the financial uncertainty of the COVID era combined with low interest rates may have helped to catalyze many projects that were shelved during the COVID years, until rates began to rise again by the end of 2022.

A comparison of these trends to previous years' residential construction activity reported in the 2020 Maryland Housing Needs Assessment reveals that the number of single-family housing construction activity during the 2020-2024 period declined by just under 6% compared to the previous 5-year period (2015-2019), when 59,579 single family homes were constructed. Multi-family housing construction, on the other hand, increased by almost 25% from the previous five-year period, as the 34,829 multi-family homes

constructed during the 2020-2024 period exceeds all previous 5-year periods going back to 2000.

Figure 4 shows the regional disaggregation of trends in single-family housing construction at an annual level. Since 2020, single-family housing production within Baltimore and the Washington suburbs has outpaced single-family housing production in the rest of the state. Between these two regions, single-family housing production in Baltimore outpaced housing production in the Washington suburbs until 2024, when the latter produced just 50 more units.

Figure 4 also provides additional insights into the decline in statewide single-family housing production shown in Figure 3. From Figure 4 it is apparent that an important driver of decreased single-family housing construction in the state has been the reduction in single-family homes produced within the Baltimore region. Suburban Washington also saw a decline in 2022 and had a longer period of reduced single-family home approvals, although it lacked the long preceding drop that Baltimore displayed. Areas of the state outside of Baltimore and Suburban Washington saw lower levels of single-family permitting activity throughout the analysis period, a result of their smaller populations.

Figure 5 displays the number of multi-family homes authorized within each Maryland region. For all years, Baltimore outproduced Suburban Washington, although the gap was narrow in 2021 and 2024. Baltimore largely accounts for the 2022 spike in statewide multi-family housing production. However, Suburban Washington had a faster rate of growth of multi-family units following 2022, especially given the decline of multi-family units in Baltimore in 2023. The rural regions of the state contribute even less to multi-family approvals than they do to single-family approvals, an unsurprising finding given their smaller population sizes and densities. Despite the absence of a clear trend in multi-family housing production within rural

regions of the state, there has been a recent small increase within Southern Maryland, the most populous of the four regions outside of Baltimore and Suburban Washington.

Residential Zoning Capacity

Table 5 displays the following for the state:

- New Housing Units - This is the number of new housing units needed to house projected household growth to the year 2045
- Gross New Acres Needed - This is the number of acres of land needed to accommodate housing unit growth to the year 2045, accounting for land allocated to infrastructure
- Zoned Capacity - This is the number of vacant (undeveloped) acres of land zoned for each residential density category
- Surplus/Shortage of Land Zoned Residential - This is the total surplus or shortage of vacant (undeveloped) land zoned for each residential density category that is available to accommodate additional residential units, after accounting for the gross new acres needed to accommodate projected household growth to the year 2045

According to our analysis, the state is projected to add an additional 590,186 housing units over the next 20 years. Of these, nearly half (49%) are within higher density categories of 3.5 units per acre or more. There is an overall surplus of approximately 1.9 million acres available to accommodate residential growth through the year 2045. The amount of land available to accommodate residential growth differs substantially by zoning category, with the largest surplus in the very low-density residential category ($\geq .2$ and < 1.0 hu/acre) and the smallest surplus in the medium density residential category (≥ 3.5 and < 10 hu/acre). The state currently has a shortage of 1,970 acres available to

accommodate projected housing growth in the high-density residential zoning category (≥ 10 hu/acre). Within each of the “rural” and “residential” Generalized Zoning categories, the land available to accommodate projected residential growth declines as the density range increases.

Another interesting finding is the mismatch between the gross acres needed for growth and the zoned capacity to accommodate growth. Within each of the three rural zoning categories and the very low-density residential category, which includes all land

zoned at less than one housing unit per acre, the share of total zoned capacity exceeds the share of gross new acres needed. The opposite pattern is observed for all density categories of one unit per acre or more, where the share of zoned capacity is less than the share of gross new acres needed. Taken together, these findings suggest that the state has an oversupply of land zoned for rural and low-density development and an undersupply of land zoned for higher-density development.

Statewide averages are revealing but do not tell us where zoned land shortages

Gen. Zoning Category	Res. Density Range	New Housing Units (Total)	Gross New Acres Needed (Total)	Zoned Capacity (Vacant Land Acres)	Surplus/ (Shortage) of Land Zoned Residential
Rural Low Density Res.	$\leq .05$ hu/acre	235	12,728	481,466	468,738
Rural Medium Density Res.	$>.05$ and $\leq .1$ hu/acre	488	7,276	290,017	282,742
Rural High Density Res.	$>.1$ and $<.2$ hu/acre	1,573	11,655	205,502	193,847
Very Low Density Res.	$\geq .2$ and <1.0 hu/acre	67,445	121,856	816,960	695,104
Low Density Res.	≥ 1.0 and <3.5 hu/acre	228,949	147,747	390,684	242,937
Medium Density Res.	≥ 3.5 and <10 hu/acre	166,753	40,425	65,152	24,727
High Density Res.	≥ 10 hu/acre	124,744	9,686	7,716	(1,970)
Total		590,186	351,375	2,257,498	1,906,123

Table 5. 2045 Residential Zoning Capacity, State of Maryland

Sources: Household projections as compiled by Maryland Department of Planning State Data & Analysis Center; 2021 USGS National Land Cover Database; Maryland Generalized Zoning GIS layer as compiled by the Maryland Department of Planning; 2020 Census P.L. 94-171 Redistricting Data Summary File.

Surplus/(Shortage) by Generalized Zoning Category									
Region	County	Rural Low Density Residential (≤.05 hu/ acre)	Rural Medium Density Residential (>.05 and ≤.1 hu/acre)	Rural High Density Residential (>.1 and <.2 hu/acre)	Very Low Density Residential (>.2 and <1.0 hu/acre)	Low Density Residential (≥1.0 and <3.5 hu/acre)	Medium Density Residential (≥3.5 and <10 hu/acre)	High Density Residential (≥10 hu/ acre)	Total Surplus/ (Shortage)
<i>Baltimore Region</i>	Anne Arundel	33,257	(560)	(580)	5,170	4,672	756	(399)	42,317
	Baltimore City	(385)	(81)	(149)	(259)	(728)	(1,596)	(1,824)	(5,022)
	Baltimore County	5,295	(373)	(488)	65,812	(2,269)	831	(842)	67,966
	Carroll	(242)	(123)	(170)	71,374	(3,451)	(4)	(32)	67,353
	Harford	(803)	(416)	79,980	1,983	(6,639)	112	(121)	74,095
	Howard	(527)	(83)	(100)	59,659	12,025	4,062	1,271	76,308
<i>Washington Surburban Region</i>	Frederick	(983)	198,447	(1,459)	(5,594)	3,370	(416)	(394)	192,972
	Montgomery	55,469	(387)	13,000	12,870	(3,166)	(3,870)	(1,401)	72,515
	Prince George's	10,860	(235)	16,018	109	(1,517)	(38)	48	25,245
<i>Southern Maryland Region</i>	Calvert	25,300	(8)	(80)	13,609	(93)	2,215	886	41,831
	Charles	15,376	(564)	(548)	103,449	1,979	1,787	234	121,715
	St. Mary's	(1,216)	(427)	42,596	272	(8,861)	501	(10)	32,854
<i>Western Maryland Region</i>	Allegany	(342)	57,634	(281)	(1,334)	(1,200)	5,375	168	60,019
	Garrett	(152)	(164)	(433)	168,433	71,710	2,490	11	241,894
	Washington	37,768	(107)	47,448	(1,145)	7,038	1,753	(116)	92,639
<i>Upper Eastern Shore Region</i>	Caroline	(16)	(180)	(4)	103,702	(1,564)	495	(3)	102,431
	Cecil	6,039	31,105	(511)	(7,584)	(87)	2,011	(26)	30,945
	Kent	64,583	(62)	3,035	(117)	(656)	2,126	144	69,053
	Queen Anne's	119,202	(345)	(1,056)	(1,289)	(330)	68	(3)	116,248
	Talbot	32,051	(47)	(248)	2,757	(640)	234	(10)	34,097
<i>Lower Eastern Shore Region</i>	Dorchester	69,022	508	(758)	(1,570)	95,628	439	147	163,417
	Somerset	(85)	(210)	(180)	29,621	1,225	1,424	157	31,952
	Wicomico	(537)	(248)	(477)	(581)	77,348	3,250	317	79,071
	Worcester	(199)	(332)	(709)	75,755	(858)	723	(174)	74,207

Table 6. Zoning Capacity Surplus / Shortages (in Acres) by Generalized Zoning Category, Maryland Counties Note: Zoning capacity shortages indicated in red parentheses
Sources: Household projections as compiled by Maryland Department of Planning State Data & Analysis Center; 2021 USGS National Land Cover Database; Maryland Generalized Zoning GIS layer as compiled by the Maryland Department of Planning; 2020 Census P.L. 94-171 Redistricting Data Summary File.

exist within the state. Table 6 displays each Maryland county's total surplus or shortage of land within each Generalized Zoning category. The Tables in the Appendix provide the intermediate calculations used to arrive at these estimates.

According to Table 6, Baltimore City (considered as a county for this analysis) is the only county with a net shortage of land zoned to accommodate housing growth to the year 2045. Baltimore currently has a shortage of land within each of its zoning categories. The shortage of rural and very low-density residential land is likely due to the limited number of housing units built at these densities within the city, while the shortage of land at higher densities is likely due to the fact that most high-density zoning districts are approaching build-out. In fact, Baltimore's largest shortage is in the high-density residential zoning district of 10 units per acre or more. The reader is reminded that these findings may also reflect the fact that the projection methodology does not explicitly account for the redevelopment of existing developed areas.

Within the remaining Maryland counties, shortages are observed in each Generalized Zoning category, but the most pervasive shortages lie within the rural medium and high-density zoning categories. Two factors likely account for this finding. First, many counties simply do not have land zoned for medium and high-density rural uses. Second, zoning capacities are estimated under the assumption that current residential development patterns will continue until 2045. The shortage of land available to accommodate rural housing options tells us that within a large number of counties, there is simply not enough land to accommodate an increase in the demand for rural housing options. If housing preferences and development policies and practices (such as land use practices, or zoning) change between now and 2045, and preferences for rural housing options weaken, the shortage of land currently zoned for rural residential

housing may become a surplus.

Within several of the state's metropolitan counties, there are shortages of land to accommodate housing growth within both rural and higher density zoning categories. In Montgomery County, for example, there is currently a shortage of land within the rural medium density residential category ($> .05$ and $\leq .1$ hu/acre) and within all residential zoning categories with densities of one unit per acre or more. Along with the City of Baltimore, Montgomery County also accounts for a large share of the state's shortage of land available to accommodate high-density residential housing at densities of 10 units per acre or more.

Housing Production and Zoning Capacity

Additional insights are revealed when housing production trends are analyzed alongside future housing needs and zoning capacity. The recent trends in housing production shown in Table 4 equate to an average of approximately 4,323 housing units produced per quarter, equal to an annual average of approximately 17,293 units per year. If this number of housing units is constructed each year until 2045, the total number of units produced over the 20-year period (345,865) would fall well short of the total number of new housing units demanded (590,186), according to Table 5. To keep on the needed pace, the state needs to add 29,503 units per year (71% more annually than the current rate), through new construction or redevelopment/infill, in areas suitable for residential growth.

Examining similar trends by housing type, we find that the mismatch between projected housing units demanded and recent trends in housing construction is likely stemming from the recent sluggish pace of single-family housing construction. Extrapolating from the recent trends reported in Table 4, the state is on pace to produce 212,446 new single-family units and 133,419 new multi-family units by 2045. If we assume that densities greater than 10 units per acre

equate to multi-family units, we find that 465,443 single-family units and 124,744 multi-family units will be needed to accommodate the growth in households through the year 2045, indicative of a shortage of single-family housing and a surplus of multi-family housing. Note, however, that these projections do not account for demographic change (such as additional aging or single households), or potential shifts in preferences for housing types. Also, multi-family housing in transit-adjacent areas has environmental benefits, through reductions in automobile usage, and health benefits, by encouraging walking and physical activity.

Given that the state has more than enough land to accommodate single-family housing construction, the recent sluggish pace of single-family housing construction cannot be blamed on zoning capacity constraints based on our analysis (and subject to the limitations described previously). The more likely explanation is that recent high mortgage interest rates and inflation have increased the cost of construction, and reduced the demand for new single-family homes, “locking in” existing homeowners

who were able to refinance their homes at lower rates prior to 2022 but now do not wish to move. Conversely, there is also evidence that indicates the “lock in” effect may have made new construction more attractive, but financial conditions continue to limit the ability of developers to respond to this demand (Harvard, 2024). While new single-family construction has been on the rise nationally, construction levels have taken close to 10 years to recover from the 2008 housing crisis and were again negatively impacted by COVID-19 in 2020, and national single-family construction was down in 2022 and 2023 in comparison to 2021 (Harvard, 2024). The most likely type of housing to be affected by zoning capacity constraints going forward is multi-family housing. As shown in Table 5, the state currently faces a shortage of land available to accommodate housing growth at densities of 10 units per acre or more. At the same time, in the regions of the state with the highest single family home prices (Montgomery, Prince George’s, and Baltimore Counties), there is also a projected shortage of available housing at moderate single-family densities.

VII. Conclusion and Policy Implications

The analyses of housing production and zoning capacity in Maryland point to several different conclusions. First, Maryland's regulatory landscape is characterized by its distinctive statewide Sustainable Growth planning framework (formerly known as the Smart Growth planning framework) and home rule provisions that, while still delegated by state law, give counties the flexibility to pursue a range of land use policy approaches, in addition to traditional zoning. While the analysis of NLLUS and NZLUD data indicate that Maryland's county zoning policies are more friendly to high-density development than counties in neighboring Virginia, the zoning capacity analysis belies this finding and suggests that the state is under-zoned for housing developed at densities of 10 units per acre or more. In contrast to Virginia, Maryland's county zoning ordinances are also often overlaid with additional regulatory tools that may stifle housing production. Finally, Maryland's cities and towns have the most restrictive land use practices in the DMV region. These findings suggest that it will become important in the years to come to find ways to coordinate local land use practices to accommodate higher-density housing growth.

Second, aside from a spike in 2022 that is likely largely attributable to the increase in multi-family construction in Baltimore City, housing production has not notably increased since the onset of the COVID-19 pandemic, and single-family housing production has gradually declined. Maryland is substantially not on pace to produce the 590,186 new housing units that will be needed to accommodate household growth to the year 2045 and has not been able to recover from the downturn in construction following the 2008 housing market crash.

Third, while Maryland has more than enough land to accommodate single-family housing unit growth through the year 2045, the state currently has a shortage of land to accommodate high-density housing

developed at densities of 10 units per acre or more. Each Maryland county faces a shortage of land to accommodate housing growth within at least one of its zoning districts. Maryland currently has an oversupply of land zoned for low-density development and an undersupply of land zoned for higher-density development due to a mismatch between the gross acres needed for growth and the zoned capacity to accommodate growth. Apart from these statewide trends, several of the state's metropolitan counties currently have shortages of land to accommodate both high-density residential development and moderate-to-high density rural residential development. The shortage of land zoned for moderate-density single-family housing in the state's metropolitan counties will continue to limit housing supply, placing upward pressure on the prices of these homes. These findings point to the need to revisit local zoning ordinances to ensure that enough land is available to accommodate the types of housing units that Marylanders are likely to prefer. There is also a role for policies aimed at encouraging Marylanders to consider higher-density housing options that are less land-consumptive and have greater environmental and health benefits.

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IX. Appendix:
2045 Residential Zoning Capacity for Maryland Counties

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2045 Residential Zoning Capacity for Maryland Counties

AT1. 2045 Residential Zoning Capacity, Allegany County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	4	31	15	37	6	357	17	15	(342)
> .05 and <= .1 hu/acre	13	89	89	107	18	271	61,878	57,905	57,634
> .1 and < .2 hu/acre	26	185	147	222	37	281	0	0	(281)
>= .2 and < 1.0 hu/acre	723	5,062	5,148	6,080	1,018	2,097	823	763	(1,334)
>= 1.0 and < 3.5 hu/acre	1,772	12,404	13,202	14,898	2,494	1,687	619	487	(1,200)
>= 3.5 and < 10 hu/acre	1,139	7,970	7,572	9,572	1,602	382	18,083	5,756	5,375
>= 10 hu/acre	435	3,043	2,827	3,655	612	58	3,329	226	168
Total	4,112	28,783	29,000	34,570	5,787	5,134	84,749	65,153	60,019

AT2. 2045 Residential Zoning Capacity, Anne Arundel County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	12	81	79	104	22	1,064	70,946	34,321	33,257
> .05 and <= .1 hu/acre	19	133	147	170	37	560	0	0	(560)
> .1 and < .2 hu/acre	41	288	306	367	79	582	3	2	(580)
>= .2 and < 1.0 hu/acre	1,566	10,959	12,998	13,984	3,025	5,246	13,558	10,416	5,170
>= 1.0 and < 3.5 hu/acre	12,887	90,208	108,977	115,110	24,902	14,790	35,382	19,462	4,672
>= 3.5 and < 10 hu/acre	10,632	74,423	89,961	94,968	20,545	5,067	31,480	5,823	756
>= 10 hu/acre	3,984	27,887	33,131	35,585	7,698	692	6,288	293	(399)
Total	29,140	203,979	245,600	260,288	56,309	28,001	263,452	70,318	42,317

AT3. 2045 Residential Zoning Capacity, Baltimore City

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	6	45	42	51	7	385	0	0	(385)
> .05 and <= .1 hu/acre	5	38	30	43	6	81	0	0	(81)
> .1 and < .2 hu/acre	18	124	126	143	19	149	0	0	(149)
>= .2 and < 1.0 hu/acre	230	1,608	1,527	1,853	244	476	1,549	217	(259)
>= 1.0 and < 3.5 hu/acre	1,875	13,122	13,166	15,115	1,994	1,055	2,277	327	(728)
>= 3.5 and < 10 hu/acre	8,749	61,240	61,163	70,546	9,305	1,967	6,854	370	(1,596)
>= 10 hu/acre	25,773	180,413	177,421	207,826	27,413	1,971	13,257	147	(1,824)
Total	36,656	256,589	253,475	295,577	38,988	6,084	51,651	1,062	(5,022)

AT4. 2045 Residential Zoning Capacity, Baltimore County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	11	75	68	88	13	514	15,603	5,809	5,295
> .05 and <= .1 hu/acre	20	142	133	167	25	373	0	0	(373)
> .1 and < .2 hu/acre	60	419	436	492	73	518	41	30	(488)
>= .2 and < 1.0 hu/acre	2,577	18,038	19,983	21,194	3,156	5,720	91,195	71,531	65,812
>= 1.0 and < 3.5 hu/acre	13,094	91,659	102,431	107,694	16,035	9,707	11,786	7,437	(2,269)
>= 3.5 and < 10 hu/acre	16,512	115,583	128,110	135,803	20,220	4,945	35,491	5,776	831
>= 10 hu/acre	11,496	80,475	88,065	94,553	14,078	1,273	8,703	431	(842)
Total	43,770	306,391	339,225	359,991	53,600	23,049	382,641	91,015	67,966

AT5. 2045 Residential Zoning Capacity, Caroline County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	1	4	7	7	2	99	98	83	(16)
> .05 and <= .1 hu/acre	4	25	29	39	14	180	0	0	(180)
> .1 and < .2 hu/acre	29	202	267	310	108	796	847	792	(4)
>= .2 and < 1.0 hu/acre	678	4,747	6,688	7,273	2,526	5,157	116,925	108,860	103,702
>= 1.0 and < 3.5 hu/acre	800	5,602	7,917	8,582	2,980	2,177	748	612	(1,564)
>= 3.5 and < 10 hu/acre	160	1,120	1,547	1,716	596	158	3,272	653	495
>= 10 hu/acre	8	54	70	83	29	3	474	0	(3)
Total	1,679	11,755	16,525	18,009	6,254	8,570	198,223	111,000	102,431

AT6. 2045 Residential Zoning Capacity, Carroll County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	3	18	15	22	5	242	0	0	(242)
> .05 and <= .1 hu/acre	5	32	33	41	8	123	1	1	(123)
> .1 and < .2 hu/acre	14	95	99	120	25	170	0	0	(170)
>= .2 and < 1.0 hu/acre	1,754	12,275	14,712	15,436	3,161	5,255	88,934	76,629	71,374
>= 1.0 and < 3.5 hu/acre	4,778	33,443	40,714	42,054	8,612	6,375	3,647	2,924	(3,451)
>= 3.5 and < 10 hu/acre	1,362	9,531	11,197	11,986	2,454	605	2,320	601	(4)
>= 10 hu/acre	311	2,174	2,604	2,734	560	53	147	21	(32)
Total	8,224	57,569	69,375	72,393	14,824	12,823	285,496	80,176	67,353

AT7. 2045 Residential Zoning Capacity, Cecil County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	6	40	39	60	19	1,122	13,680	7,161	6,039
> .05 and <= .1 hu/acre	3	23	22	34	11	181	36,194	31,286	31,105
> .1 and < .2 hu/acre	20	137	158	203	66	511	0	0	(511)
>= .2 and < 1.0 hu/acre	1,417	9,921	13,358	14,670	4,750	8,232	749	647	(7,584)
>= 1.0 and < 3.5 hu/acre	2,689	18,826	25,116	27,839	9,013	6,694	8,373	6,606	(87)
>= 3.5 and < 10 hu/acre	1,140	7,983	10,267	11,804	3,822	949	8,000	2,960	2,011
>= 10 hu/acre	217	1,516	2,015	2,242	726	73	745	46	(26)
Total	5,492	38,446	50,975	56,852	18,406	17,762	211,946	48,707	30,945

AT8. 2045 Residential Zoning Capacity, Charles County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	5	38	35	58	20	715	30,014	16,091	15,376
> .05 and <= .1 hu/acre	10	69	86	106	37	564	0	0	(564)
> .1 and < .2 hu/acre	21	145	171	223	78	558	12	11	(548)
>= .2 and < 1.0 hu/acre	1,552	10,867	15,452	16,673	5,806	9,945	126,346	113,394	103,449
>= 1.0 and < 3.5 hu/acre	4,022	28,153	41,535	43,196	15,043	9,619	15,816	11,599	1,979
>= 3.5 and < 10 hu/acre	1,835	12,845	18,842	19,708	6,863	1,749	12,106	3,536	1,787
>= 10 hu/acre	320	2,239	3,229	3,436	1,196	102	10,020	336	234
Total	7,765	54,356	79,350	83,399	29,043	23,252	292,288	144,967	121,715

AT9. 2045 Residential Zoning Capacity, Dorchester County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	2	15	14	20	5	158	70,567	69,180	69,022
> .05 and <= .1 hu/acre	9	64	71	86	22	320	865	828	508
> .1 and < .2 hu/acre	42	291	287	393	102	758	0	0	(758)
>= .2 and < 1.0 hu/acre	678	4,746	5,022	6,415	1,669	3,500	2,049	1,930	(1,570)
>= 1.0 and < 3.5 hu/acre	835	5,848	6,955	7,904	2,057	1,419	122,756	97,047	95,628
>= 3.5 and < 10 hu/acre	417	2,919	3,303	3,946	1,027	246	4,828	685	439
>= 10 hu/acre	64	451	572	609	158	18	2,065	165	147
Total	2,048	14,333	16,225	19,373	5,041	6,418	341,994	169,835	163,417

AT10. 2045 Residential Zoning Capacity, Frederick County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	6	39	34	58	19	1,295	455	312	(983)
> .05 and <= .1 hu/acre	17	118	160	178	59	897	243,480	199,344	198,447
> .1 and < .2 hu/acre	56	390	521	586	196	1,459	0	0	(1,459)
>= .2 and < 1.0 hu/acre	2,141	14,984	21,317	22,516	7,533	13,318	8,717	7,724	(5,594)
>= 1.0 and < 3.5 hu/acre	5,560	38,920	56,248	58,486	19,566	13,029	21,342	16,400	3,370
>= 3.5 and < 10 hu/acre	3,199	22,396	31,909	33,655	11,259	2,730	12,132	2,314	(416)
>= 10 hu/acre	1,958	13,706	19,136	20,596	6,890	627	7,984	233	(394)
Total	12,936	90,552	129,325	136,076	45,524	33,355	407,715	226,327	192,972

AT11. 2045 Residential Zoning Capacity, Garrett City

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	3	19	18	24	5	152	0	0	(152)
> .05 and <= .1 hu/acre	7	52	49	64	13	192	30	28	(164)
> .1 and < .2 hu/acre	35	245	231	305	60	433	0	0	(433)
>= .2 and < 1.0 hu/acre	1,089	7,620	7,091	9,471	1,851	3,805	182,098	172,237	168,433
>= 1.0 and < 3.5 hu/acre	1,058	7,403	4,944	9,202	1,799	1,385	86,013	73,095	71,710
>= 3.5 and < 10 hu/acre	88	618	531	768	150	39	5,361	2,529	2,490
>= 10 hu/acre	21	149	136	185	36	3	1,279	14	11
Total	2,301	16,105	13,000	20,018	3,913	6,009	414,927	247,903	241,894

AT12. 2045 Residential Zoning Capacity, Harford County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	7	52	47	66	14	803	1	1	(803)
> .05 and <= .1 hu/acre	14	96	67	123	27	416	0	0	(416)
> .1 and < .2 hu/acre	20	137	146	176	39	343	109,378	80,323	79,980
>= .2 and < 1.0 hu/acre	1,773	12,408	14,980	15,886	3,478	5,630	9,289	7,613	1,983
>= 1.0 and < 3.5 hu/acre	6,385	44,694	54,860	57,221	12,527	8,167	2,074	1,528	(6,639)
>= 3.5 and < 10 hu/acre	3,820	26,741	32,475	34,236	7,495	1,815	9,889	1,927	112
>= 10 hu/acre	892	6,245	7,526	7,995	1,750	153	747	32	(121)
Total	12,911	90,374	110,100	115,703	25,330	17,328	278,493	91,424	74,095

AT13. 2045 Residential Zoning Capacity, Howard County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	5	33	29	44	10	534	27	7	(527)
> .05 and <= .1 hu/acre	3	18	19	23	5	83	0	0	(83)
> .1 and < .2 hu/acre	7	46	44	60	14	106	7	6	(100)
>= .2 and < 1.0 hu/acre	955	6,682	8,491	8,751	2,069	3,631	83,335	63,290	59,659
>= 1.0 and < 3.5 hu/acre	7,057	49,401	62,843	64,702	15,301	9,803	34,116	21,828	12,025
>= 3.5 and < 10 hu/acre	4,624	32,365	40,858	42,390	10,025	2,474	25,008	6,537	4,062
>= 10 hu/acre	2,751	19,258	23,842	25,223	5,965	557	15,834	1,828	1,271
Total	15,400	107,802	136,125	141,192	33,390	17,188	160,525	93,496	76,308

AT14. 2045 Residential Zoning Capacity, Kent County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	1	7	2	9	2	88	72,418	64,671	64,583
> .05 and <= .1 hu/acre	2	15	14	20	5	62	0	0	(62)
> .1 and < .2 hu/acre	16	111	100	147	36	246	3,451	3,281	3,035
>= .2 and < 1.0 hu/acre	456	3,193	3,231	4,226	1,033	2,145	2,138	2,029	(117)
>= 1.0 and < 3.5 hu/acre	628	4,395	4,585	5,817	1,422	955	369	299	(656)
>= 3.5 and < 10 hu/acre	151	1,058	1,201	1,400	342	84	3,381	2,209	2,126
>= 10 hu/acre	31	220	218	291	71	6	236	150	144
Total	1,286	8,999	9,350	11,909	2,911	3,586	175,676	72,639	69,053

AT15. 2045 Residential Zoning Capacity, Montgomery County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	8	56	50	72	16	914	95,900	56,383	55,469
> .05 and <= .1 hu/acre	12	87	84	112	25	417	41	30	(387)
> .1 and < .2 hu/acre	26	182	186	235	53	417	15,649	13,417	13,000
>= .2 and < 1.0 hu/acre	2,312	16,181	19,875	20,872	4,690	8,520	27,599	21,390	12,870
>= 1.0 and < 3.5 hu/acre	14,590	102,131	127,591	131,734	29,603	16,847	30,509	13,681	(3,166)
>= 3.5 and < 10 hu/acre	17,114	119,800	149,160	154,525	34,725	8,398	33,297	4,527	(3,870)
>= 10 hu/acre	16,491	115,434	139,754	148,893	33,459	2,244	9,488	843	(1,401)
Total	50,553	353,870	436,700	456,442	102,572	37,757	290,783	110,271	72,515

AT16. 2045 Residential Zoning Capacity, Prince George's County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	10	72	53	84	12	1,044	23,677	11,904	10,860
> .05 and <= .1 hu/acre	13	92	79	107	15	235	0	0	(235)
> .1 and < .2 hu/acre	40	277	264	323	46	353	21,988	16,371	16,018
>= .2 and < 1.0 hu/acre	1,666	11,663	13,011	13,614	1,951	3,350	4,353	3,459	109
>= 1.0 and < 3.5 hu/acre	16,870	118,087	133,043	137,838	19,752	11,337	22,963	9,820	(1,517)
>= 3.5 and < 10 hu/acre	14,861	104,030	115,449	121,430	17,401	4,146	24,505	4,108	(38)
>= 10 hu/acre	11,535	80,743	87,626	94,249	13,506	1,018	8,920	1,067	48
Total	44,995	314,962	349,525	367,645	52,683	21,483	279,005	46,728	25,245

AT17. 2045 Residential Zoning Capacity, Queen Anne's County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	2	13	9	19	6	201	134,622	119,404	119,202
> .05 and <= .1 hu/acre	11	74	82	106	32	474	139	129	(345)
> .1 and < .2 hu/acre	44	310	363	447	137	1,056	0	0	(1,056)
>= .2 and < 1.0 hu/acre	882	6,176	8,023	8,905	2,729	5,641	4,754	4,352	(1,289)
>= 1.0 and < 3.5 hu/acre	1,433	10,028	13,162	14,460	4,432	3,429	4,486	3,099	(330)
>= 3.5 and < 10 hu/acre	277	1,938	2,535	2,795	857	228	1,981	296	68
>= 10 hu/acre	11	76	101	110	34	3	1,445	0	(3)
Total	2,659	18,615	24,275	26,841	8,227	11,032	229,302	127,280	116,248

AT18. 2045 Residential Zoning Capacity, Somerset County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	1	6	6	8	2	85	0	0	(85)
> .05 and <= .1 hu/acre	7	51	50	66	15	210	0	0	(210)
> .1 and < .2 hu/acre	12	86	95	111	25	180	0	0	(180)
>= .2 and < 1.0 hu/acre	526	3,684	3,830	4,761	1,077	2,175	33,606	31,796	29,621
>= 1.0 and < 3.5 hu/acre	519	3,635	3,532	4,698	1,063	809	2,419	2,034	1,225
>= 3.5 and < 10 hu/acre	221	1,544	1,522	1,996	452	112	3,663	1,536	1,424
>= 10 hu/acre	75	528	390	682	154	18	629	175	157
Total	1,362	9,533	9,425	12,321	2,788	3,590	197,783	35,542	31,952

AT19. 2045 Residential Zoning Capacity, St. Mary's City

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	3	21	20	33	12	1,216	0	0	(1,216)
> .05 and <= .1 hu/acre	8	59	63	91	33	427	0	0	(427)
> .1 and < .2 hu/acre	11	78	102	122	44	294	82,333	42,890	42,596
>= .2 and < 1.0 hu/acre	1,319	9,234	12,803	14,407	5,173	8,581	10,142	8,853	272
>= 1.0 and < 3.5 hu/acre	3,319	23,230	33,763	36,244	13,014	9,727	1,057	865	(8,861)
>= 3.5 and < 10 hu/acre	741	5,184	7,363	8,089	2,905	755	2,810	1,255	501
>= 10 hu/acre	294	2,058	3,010	3,211	1,153	101	1,057	91	(10)
Total	5,695	39,863	57,125	62,197	22,334	21,100	213,330	53,955	32,854

AT20. 2045 Residential Zoning Capacity, Talbot County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	1	8	9	10	2	75	43,548	32,125	32,051
> .05 and <= .1 hu/acre	2	11	7	15	3	47	0	0	(47)
> .1 and < .2 hu/acre	19	130	137	166	37	248	0	0	(248)
>= .2 and < 1.0 hu/acre	965	6,752	6,811	8,677	1,925	3,551	6,985	6,309	2,757
>= 1.0 and < 3.5 hu/acre	1,064	7,450	8,310	9,574	2,124	1,376	1,085	737	(640)
>= 3.5 and < 10 hu/acre	346	2,425	2,656	3,116	691	191	2,661	425	234
>= 10 hu/acre	46	320	395	412	91	10	1,395	0	(10)
Total	2,442	17,095	18,325	21,970	4,875	5,498	169,514	39,595	34,097

AT21. 2045 Residential Zoning Capacity, Washington County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	5	38	34	52	14	879	56,853	38,647	37,768
> .05 and <= .1 hu/acre	12	87	89	119	32	448	413	341	(107)
> .1 and < .2 hu/acre	48	339	403	465	126	930	56,261	48,378	47,448
>= .2 and < 1.0 hu/acre	1,305	9,137	11,719	12,536	3,399	5,939	5,367	4,795	(1,145)
>= 1.0 and < 3.5 hu/acre	3,667	25,667	32,566	35,217	9,550	6,493	16,736	13,531	7,038
>= 3.5 and < 10 hu/acre	2,136	14,949	18,756	20,510	5,562	1,318	12,834	3,071	1,753
>= 10 hu/acre	800	5,601	6,834	7,685	2,084	201	6,483	85	(116)
Total	7,974	55,816	70,400	76,583	20,767	16,209	292,474	108,848	92,639

AT22. 2045 Residential Zoning Capacity, Wicomico County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre									
> .05 and <= .1 hu/acre	5	35	36	49	14	537	0	0	(537)
> .1 and < .2 hu/acre	6	41	40	57	16	248	0	0	(248)
>= .2 and < 1.0 hu/acre	25	172	198	238	67	477	0	0	(477)
>= 1.0 and < 3.5 hu/acre	844	5,911	7,365	8,212	2,301	4,509	4,275	3,928	(581)
>= 3.5 and < 10 hu/acre	2,771	19,398	25,088	26,951	7,553	5,387	111,188	82,735	77,348
>= 10 hu/acre	1,384	9,685	11,999	13,455	3,771	930	17,317	4,180	3,250
Total	5,460	38,222	48,650	53,104	14,883	12,201	231,215	91,271	79,071

AT23. 2045 Residential Zoning Capacity, Worcester County

Gen. Zoning Category	Housing Units Lost	Housing Units Remaining	Occupied Housing Units	Housing Units	New Housing Units	Gross New Acres Needed	Zoned Capacity (Acres)	Zoned Capacity (Vacant Land Acres)	Surplus / (Shortage) of Land Zoned Residential
<= .05 hu/acre	3	18	22	24	5	199	0	0	(199)
> .05 and <= .1 hu/acre	11	74	82	95	21	332	0	0	(332)
> .1 and < .2 hu/acre	50	352	382	450	98	709	0	0	(709)
>= .2 and < 1.0 hu/acre	757	5,302	5,533	6,782	1,480	3,261	84,829	79,015	75,755
>= 1.0 and < 3.5 hu/acre	1,482	10,377	9,973	13,274	2,897	1,740	1,219	882	(858)
>= 3.5 and < 10 hu/acre	1,802	12,616	6,700	16,138	3,523	807	6,771	1,531	723
>= 10 hu/acre	2,927	20,492	2,908	26,213	5,722	372	1,221	199	(174)
Total	7,033	49,230	25,600	62,976	13,746	7,420	291,008	81,627	74,207

