



Bucks County

Parking Study | November 2025



BCPC
Bucks County Planning Commission



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Introduction

Parking minimums established in zoning regulations often result in an oversupply of parking—wasting valuable land and creating unnecessary impervious surfaces. Excessive requirements can also drive up construction costs, limit development opportunities, encourage car dependency, and prioritize vehicles over pedestrians. In many cases, large parking lots sit mostly empty for much of the day, detracting from community character and creating stormwater management challenges.

Municipal ordinances vary widely in both the number of spaces required and the factors considered—such as building size, number of employees, or customer seating capacity. Many local standards remain unchanged since municipalities adopted their first zoning ordinances. For newer or evolving land uses, requirements are often borrowed from other municipalities or based on outdated national averages, without considering current transportation trends such as ridesharing, warehouse automation, or mixed-use development.

The rise of e-commerce has also reshaped parking demand. Historically, standards were designed to accommodate peak use at brick-and-mortar stores, but as online shopping grows, many physical stores attract fewer customers, leaving parking lots underutilized.

Parking reform is identified as a top priority in the *Bucks2040 Vision Plan*, Bucks County's new comprehensive plan. To better understand the dynamics of off-street parking requirements, the Bucks County Planning Commission (BCPC) conducted a countywide inventory and analysis of parking standards for major land uses across all 54 Bucks County municipalities. The resulting *Bucks County Parking Study* summarizes this data to help the county's municipalities evaluate their current standards, identify opportunities for modernization, and compare local regulations to those of neighboring communities.







Methodology

Our analysis seeks to provide a general understanding and comparison of how much parking is required in municipal ordinances and provide a tool for evaluation of parking standards. Using data from the 2022 parking inventory, we distilled Bucks County municipal parking requirements into simple standards that would allow us to make cross-county comparisons and provide benchmarks for municipalities to evaluate their parking standards.

Land Use Categories & Standards

Municipal parking requirements are mostly controlled by land use categories. These categories include:

- Residential (including attached, semi-detached, and multifamily residential uses)
- Commercial (including retail, shopping center, and office uses)
- Warehouse

Land use type is not the only controlling variable for minimum parking requirements. Many municipalities also control parking minimums through standards such as:

- General parking standard (standards which apply to the entire municipality)
- District-specific standard (standards which apply only to the specified zoning district)
- Performance standard (standards under the performance standard subdivision land use)
- Use-specific standard (standards which apply to specific uses)
- Overall requirements (a combination of regulation types)
- Housing type (a standard based on type of housing)



Definitions

Parking standards were collected and categorized, and variables were normalized using a set of assumptions to permit municipal comparisons. For each land use or other standard, the minimum, maximum, median, and mode for each variable was determined.

- **Minimum:** The fewest number of spaces permitted by land use or other standard.
- **Maximum:** The greatest number of spaces permitted by land use or other standard.
- **Median:** The parking standard by land use or other standard at the midpoint of the frequency of municipal parking standards.
- **Mode:** The parking standard by land use or other standard appearing most often in municipal parking standards.



Assumptions

Residential Parking

- For ordinances which use number of bedrooms to determine parking minimums, we assumed this equated to four spaces per single-family detached dwelling, three spaces per twin and townhouse dwelling, and two spaces per multifamily and apartment unit.
- In cases where multiple related land uses are present in an ordinance, such as garden apartment and mid-rise apartment, retail sales and



retail sales for furniture stores, office and real estate office, the most appropriate provision was selected or the provisions were averaged together.

- Multiple requirements based on apartment bedrooms in a single ordinance were averaged. For example, a minimum of 1.5 spaces for a one-bedroom unit and a minimum of two spaces for a two-bedroom unit would be counted as a minimum of 1.75 spaces per apartment unit for that ordinance.
- Spillover requirements were included in the number of spaces required per dwelling.

Commercial Parking

- For commercial uses, some minimums are based on the total square footage of a development rather than a fixed number of spaces per 1,000 square feet. We assumed retail stores contain an average of 5,000 square feet, shopping centers contain an average of 100,000 square feet, and offices contain an average of 20,000 square feet.
- Formulas were used to normalize parking minimums that required spaces based on multiple metrics, such as the following requirement: one space for each 100 square feet of gross area used for serving customers for the first 2,000 square feet plus one space for each 200 square feet of gross area used for serving customers in excess of 2,000 square feet.

Warehouse Parking

- For warehouse uses, a typical warehouse was chosen with the following attributes:
 - 100,000 square feet of building space (90 percent warehouse and 10 percent flex space)
 - 100 workers and five managers on the largest shift
 - 10 trucks stored on the site

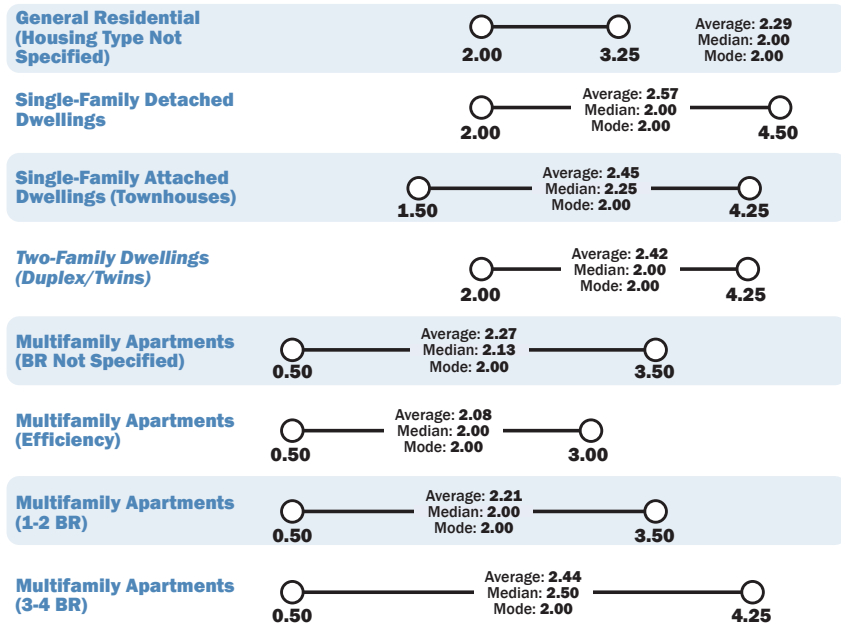


Analysis & Results

Residential Parking Requirements

Countywide, off-street parking requirements for residential land uses tend to be around two spaces per dwelling. This is also the most frequent requirement for single-family uses. For ordinances that require parking based on housing type or land use, there tends to be a slightly higher overall amount of parking required. Both the minimum and maximum parking requirements in the county come from district-specific standards.

Municipal Parking Requirements by Residential Use Type



For multifamily dwellings, the difference between the minimum and maximum parking requirements is greater than it is for single-family

dwellings. The overall lowest requirements come from district-specific standards, and the overall highest number of required spaces come from the performance standard subdivision use. When the number of bedrooms is not specified, the number of required spaces is between one-and-a-half and three off-street parking spaces per dwelling unit. The most common requirement for multifamily uses is two spaces per dwelling unit.

Most municipalities employ a general standard for multifamily dwellings, but others require parking spaces based on number of bedrooms. Out of the 97 total ordinances for multifamily apartments, approximately 30 percent specify the number of bedrooms, 50 percent have only a general multifamily standard, and the remaining 16 percent use a general residential standard.

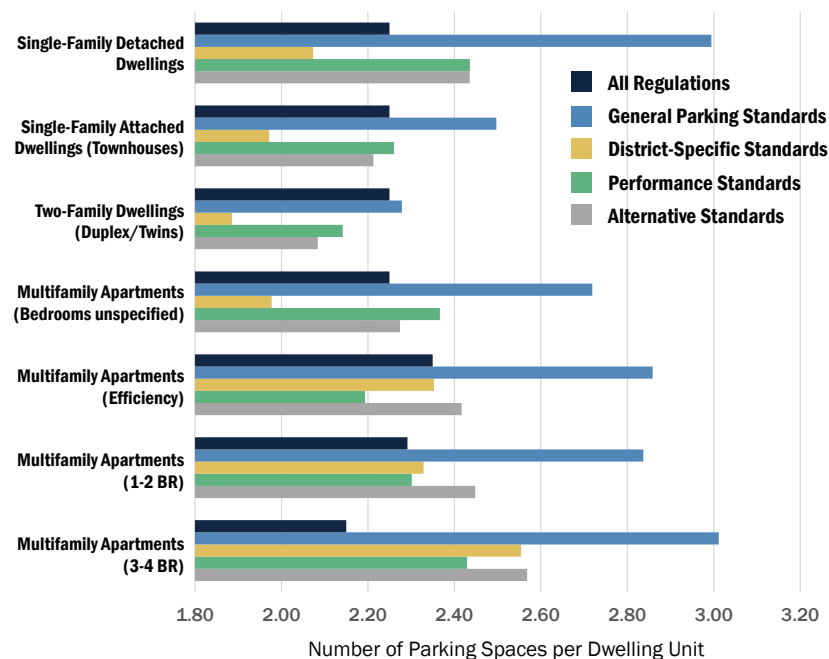
Parking minimum data for residential uses is categorized to note whether the regulation specifies the type of housing. For example, Northampton Township requires two parking spaces for all residential uses and does not specify parking requirements for specific house types. There are 13 municipalities in Bucks County that regulate parking minimums using a general residential standard without reference to house type.

Required Parking Spaces by Regulation Type

Type of regulation also has some bearing on the required number of parking spaces. Most notably, the Performance Standard requires the highest amount of parking for all housing types. Fourteen municipalities (10 of which are located in Upper Bucks) do not have separate use regulations for townhouses, duplexes/twins, or multifamily apartments, but regulate these forms of housing under the performance subdivision standard (including the Townships of Bedminster, East Rockhill, Haycock, Hilltown, Milford, Richland, Tinicum, and Warwick; and the Boroughs of Langhorne, Langhorne Manor, Riegelsville, Silverdale, Trumbauersville, and Tullytown). Five additional communities (Durham, Newtown and Springfield Townships; and Morrisville and Perkasie Boroughs) primarily use a combination of both performance standards and general parking standards for townhouses, duplexes/twins, and multifamily apartments.



Average Number of Required Parking Spaces for Residential Uses by Regulation



Commercial Parking Requirements

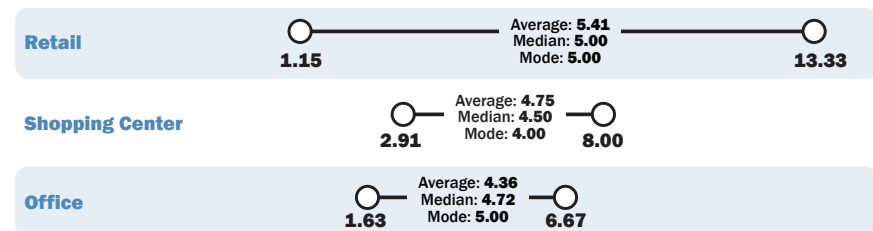
Bucks County municipal ordinances use several types of standards to dictate how many parking spaces are required for commercial uses. For example, many ordinances require a fixed number of spaces per 1,000 square feet. In others, spaces are based on the total square footage. And in some ordinances the standard differs depending on the size of the buildings. To provide a uniform comparison, we normalized these differing requirements into one common variable—a fixed number of off-street parking spaces required per 1,000 square feet of building space.

The figure below shows a countywide overview of the number of parking spaces required per 1,000 square feet of building area, with data for the average, median, mode, minimum, and maximum number of spaces required.

Municipal standards for commercial parking can vary greatly, as the data shows a substantial gap between the minimum and maximum parking spaces required per 1,000 square feet of building space. However, these outliers are limited to a few municipal ordinances. Across the three main commercial types, retail uses tend to have the highest number of required parking spaces compared to shopping center and office uses. The most common requirement (mode) for retail and office uses is five spaces per 1,000 square feet of building space; for shopping centers it is four spaces. However, more than 70 percent of ordinances require more than five spaces per 1,000 square feet for retail and office uses. More 60 percent of ordinances require more than four spaces per 1,000 square feet for shopping center uses.

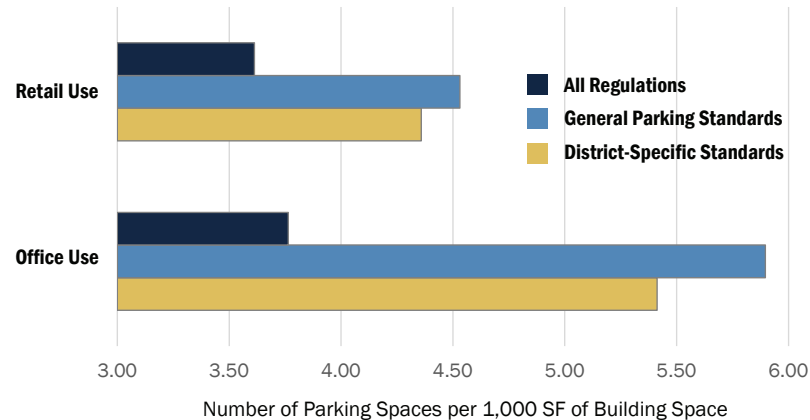
Municipalities that use district-specific standards for commercial uses generally require fewer parking spaces. Compared to the general parking standards employed for the entire municipality, the district standards require on average 36 percent less parking for retail uses (3.76 versus 5.90 spaces) and 20 percent less parking for offices (3.61 versus 4.53 spaces). Examples of district-based requirements include the Borough Center (BC) District in Tullytown Borough and the Central Commercial (CC) District in Doylestown Borough.

Municipal Parking Requirements by Commercial Use Type





Average Number of Required Parking Spaces for Residential Uses by Regulation



Warehouse Parking Requirements

Unlike residential and commercial uses, warehouse requirements are usually based on a combination of variables, including the number of employees on the largest shift, number of vehicles stored on the site, and the total square footage of the building. Warehouse parking requirements were normalized by positing a prototypical warehouse of 100,000 square feet, with 100 workers, 5 managers, and 10 vehicles normally stored on-site. The figure below shows a countywide overview of the number of parking spaces required for the sample warehouse, with data for the average, median, mode, minimum, and maximum number of spaces required. The most common requirement (mode) resulted in a lot of over 200 spaces, whereas the average resulted in a lot slightly less than 150 spaces.

About 47 percent of municipal ordinances include a minimum parking requirement for warehouses based on the total building square footage. About 72 percent of ordinances include a minimum parking requirement based on employees on the largest shift (along with other parking variables),

and about 64 percent of ordinances include a minimum parking requirement based on the number of vehicles stored on the site (along with other parking variables). Our analysis found over a 40-space difference between ordinances based on the number of workers on the largest shift and those that are based on total building square footage.

Municipal Parking Requirements for Warehouse Use





Key Takeaways

The results of this study illustrate countywide trends in parking requirements. We recommend that municipal officials consider the following key takeaways when evaluating municipal parking standards:

- ➔ **Conventional parking minimums based on land use can be overly simplistic and ignore factors such as density, transit availability, and community goals.** While use cannot be entirely disregarded, municipalities that overemphasize land use tend to have regulations that result in less efficient land use. For example, multifamily buildings tend to generate a similar amount of parking demand regardless of the number of bedrooms per unit, but many regulations require parking spaces on a per bedroom basis.
- ➔ **Some municipalities would be better served to design parking standards in connection with their zoning districts** (or even by establishing special parking districts). For example, municipalities might consider altogether eliminating parking requirements within their town centers, mixed-use districts, or portions of the municipality. This strategy can improve downtown walkability and make urban redevelopment more feasible.
- ➔ **The Performance Standard Subdivision use, found in many municipal ordinances, contributes to excessive parking for residential uses.** There are 14 municipalities in Bucks County that do not have separate use regulations for townhouses, duplexes/twins, or multifamily apartments and primarily regulate these forms of housing under the Performance Standard Subdivision. These municipalities should consider establishing separate use regulations to both reform parking requirements and to better promote these forms of housing.

- ➔ **Parking requirements tied to district-specific standards, performance standards, or alternative standards should not exceed that of the general parking standard.** Municipalities would be better served using these types of regulations to reduce parking, not to increase it.
- ➔ **Municipalities should consider developing parking regulations that differentiate small and large retail establishments,** provided that larger stores are required to construct fewer parking spaces per 1,000 square feet (some ordinances currently require more). This would ensure adequate parking for smaller retail uses, but not oversupply parking for larger retail stores.
- ➔ **Warehouse parking regulations should be based primarily on the number of spaces per employee** rather than number of spaces per square foot.

These suggestions for reforming parking requirements should be evaluated alongside other parking management tools recommended by organizations such as the Delaware Valley Planning Commission (DVRPC), Institute of Transportation Engineers (ITE), and Urban Land Institute (ULI). Such techniques could include efficiency-based parking standards, parking maximums, cost-based pricing, and improved bicycle and pedestrian facilities. These methods can help communities more effectively manage parking and plan for a better future.

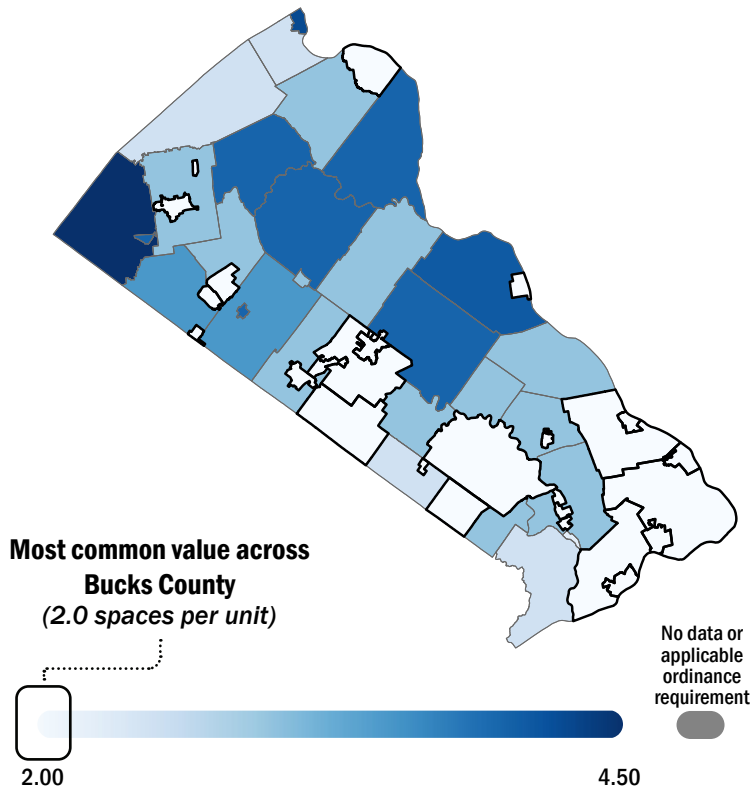
BCPC will continue engaging in the comprehensive planning process and addressing the parking concerns raised in Bucks2040. In tandem, DVRPC is conducting a regional parking assessment. Once complete, we will compare countywide and municipal minimum parking requirements against real-world data. Our goal is to give municipalities a clearer understanding of how their parking standards compare to others and how they function in practice.



Municipal Scorecards

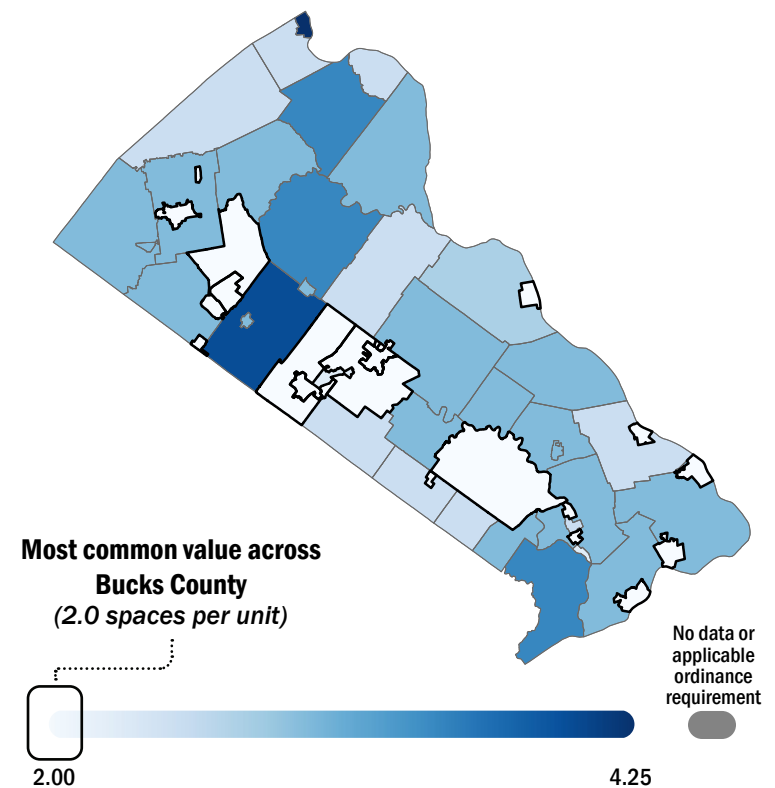
Residential Parking Minimums

Single-Family Detached - Parking Spaces Required per Dwelling Unit



Residential Parking Minimums

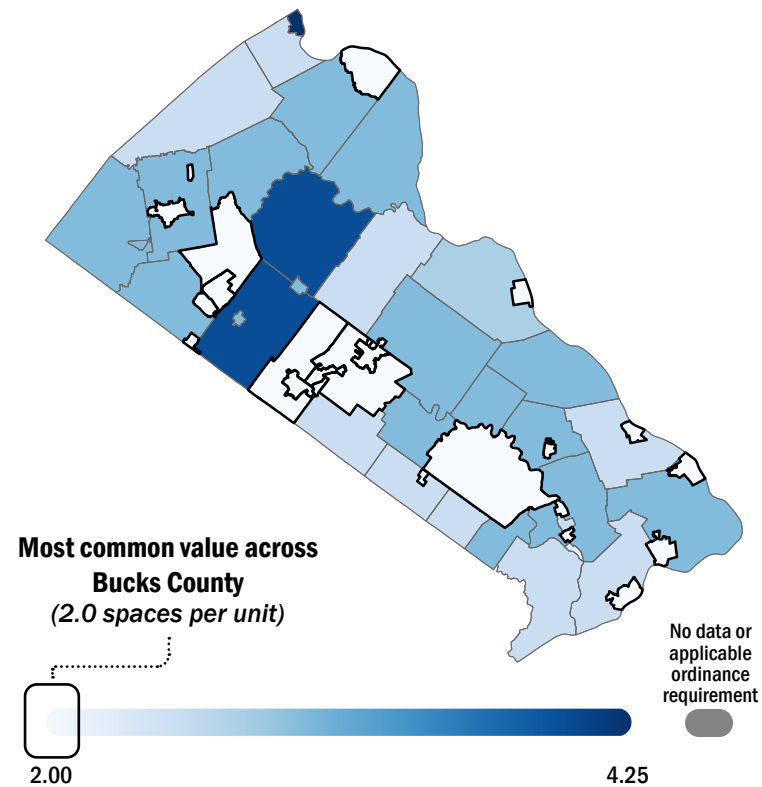
Single-Family Attached - Parking Spaces Required per Dwelling Unit





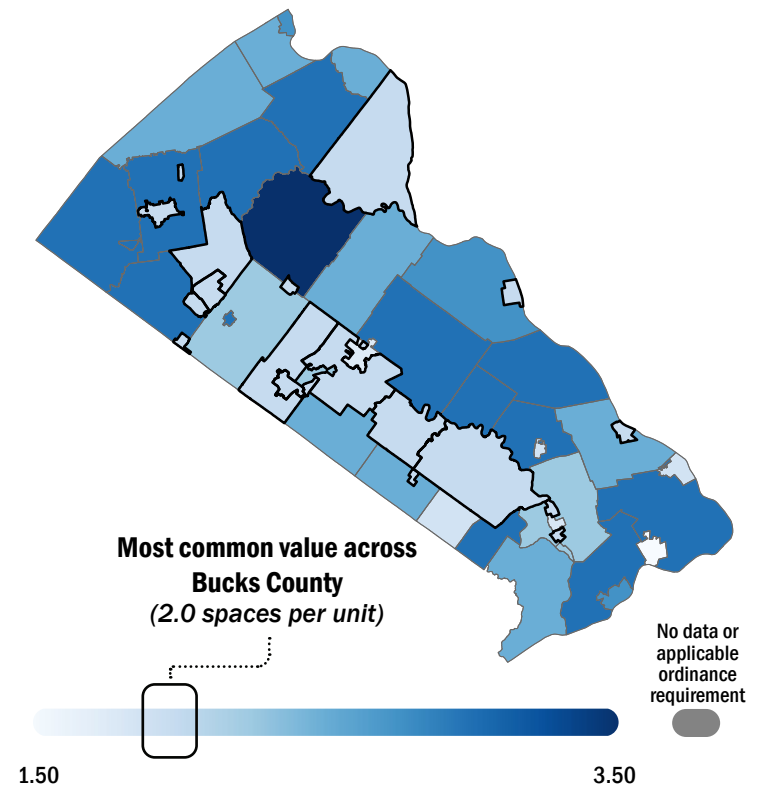
Residential Parking Minimums

Two-Family (Duplex/Twins) - Parking Spaces Required per Dwelling Unit



Residential Parking Minimums

Multifamily Apartments - Parking Spaces Required per Dwelling Unit

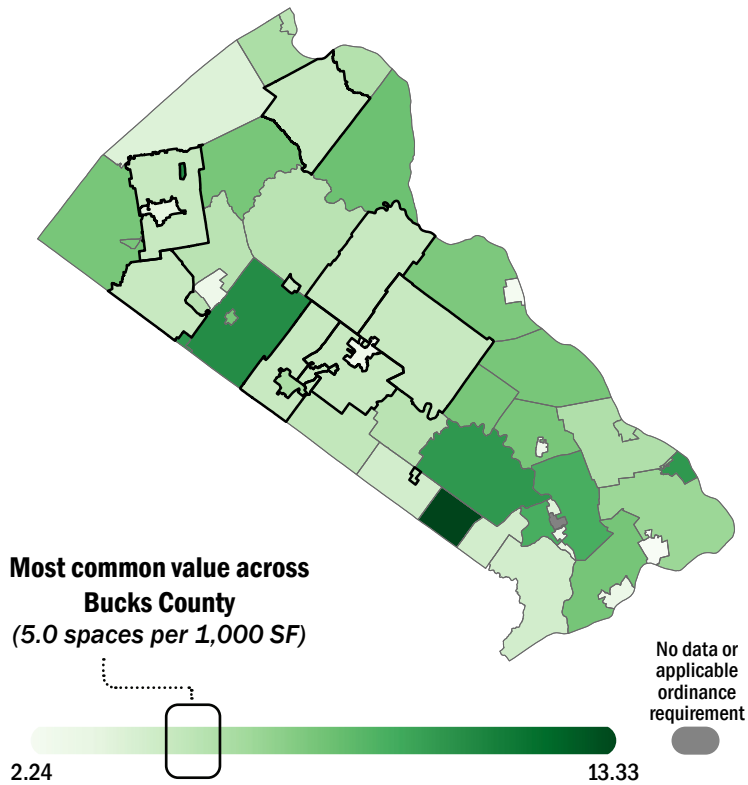




Municipal Scorecards

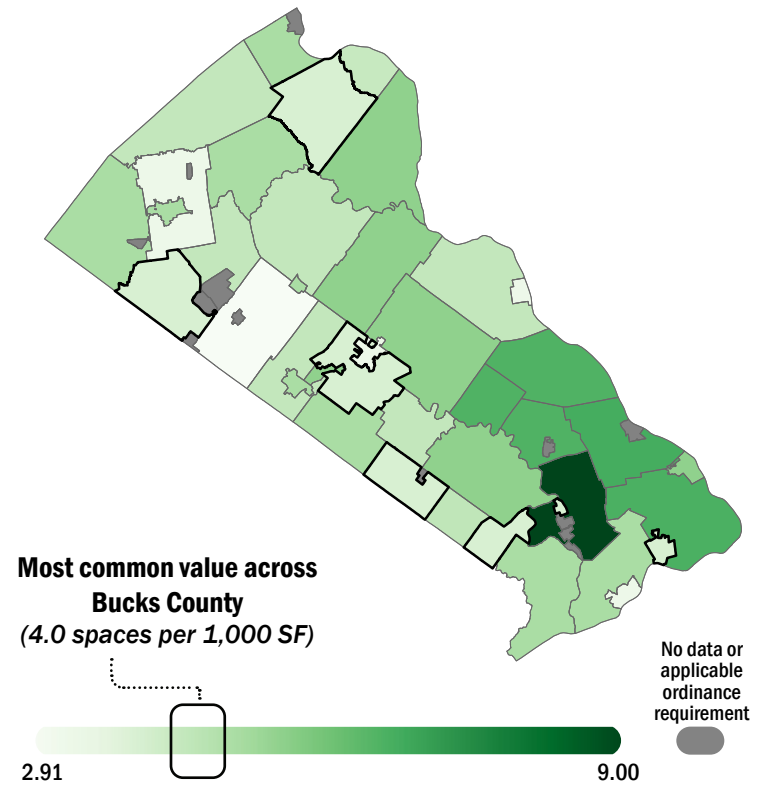
Nonresidential Parking Minimums

Retail - Parking Spaces Required per 1,000 SF of Building Space



Nonresidential Parking Minimums

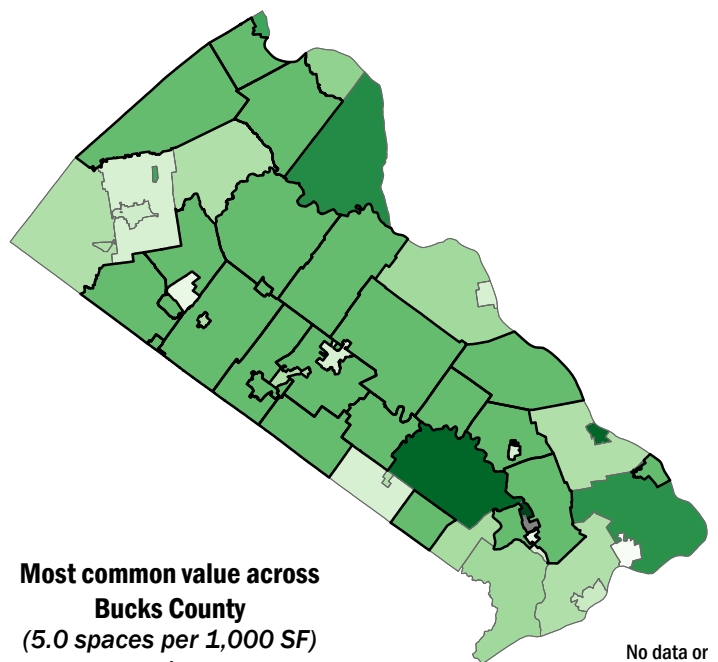
Shopping Center - Parking Spaces Required per 1,000 SF of Building Space





Nonresidential Parking Minimums

Office - Parking Spaces Required per 1,000 SF of Building Space



2.48

7.17

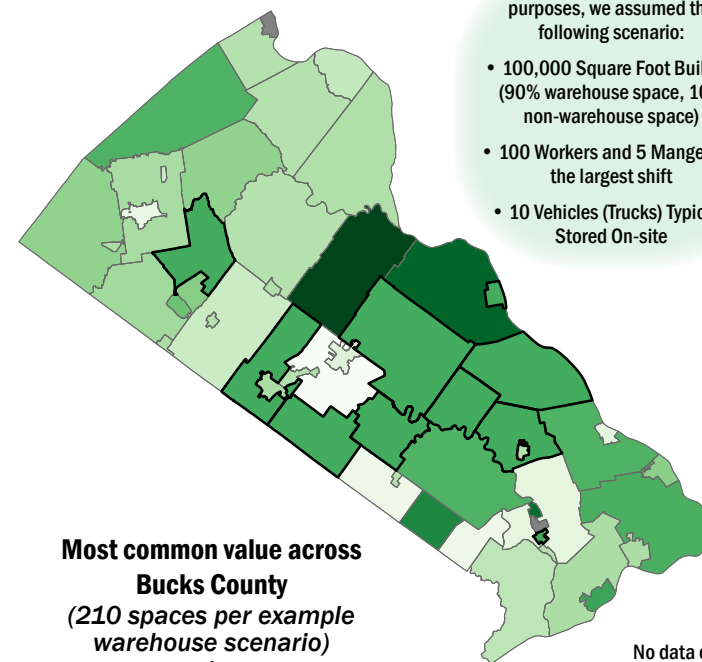
No data or applicable ordinance requirement

Nonresidential Parking Minimums

Warehouse - Parking Spaces Required *

* For analysis/comparison purposes, we assumed the following scenario:

- 100,000 Square Foot Building (90% warehouse space, 10% non-warehouse space)
- 100 Workers and 5 Managers on the largest shift
- 10 Vehicles (Trucks) Typically Stored On-site



10

333

No data or applicable ordinance requirement



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