

CITY OF CHARLOTTESVILLE

Department of Neighborhood Development Services

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# Please Take Notice

The Charlottesville Planning Commission will hold a Joint Work Session with City Council on **Thursday July 13, 2023, at 5pm in the City Hall Basement Conference room (605 East Main Street).**

## AGENDA

1. Topics of Review in Association with Zoning Ordinance Update
  - a. Residential District Discussion (R-A, R-B, R-C etc.)
  - b. Module Three

Public comment will be accepted in writing at the meeting or by emailing comments to [creasym@charlottesville.gov](mailto:creasym@charlottesville.gov) during the meeting.

Individuals with disabilities who require assistance or special arrangements to participate in the public meeting may call the ADA Coordinator at (434) 970-3182 or submit a request via email to [ada@charlottesville.gov](mailto:ada@charlottesville.gov). The City of Charlottesville requests that you provide a 48 hour notice so that proper arrangements may be made.



CITY OF CHARLOTTESVILLE  
“A Great Place to Live for All of Our Citizens”

Department of Neighborhood Development Services

## **Memorandum**

**To:** Mayor Lloyd Snook and the Charlottesville City Council  
Chair Lyle Solla-Yates and the Charlottesville Planning Commission  
Michael Rogers, Interim City Manager

**From:** James Freas, Director, Neighborhood Development Services

**Date:** July 13, 2023

**Re:** Residential District Discussion, Zoning Module 3

**CC:** Sam Sanders, Deputy City Manager for Operations

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There are a number of topics to discuss at the upcoming meeting. Below are some of the highlights for the discussion.

### **Residential Districts**

One of our primary goals for this meeting is a discussion of the Residential A through C Districts (R-A, R-B, and R-C). These districts implement the General Residential and Medium Intensity Residential land use areas on the Future Land Use Map.

The following are a list of topics to discuss:

Building Standards – We will go through the standards regulating the form and scale of development in these districts, using examples to illustrate development potential. In particular we anticipate discussion of front setbacks, massing limits, and minimum lot sizes.

Commercial Uses – We will discuss the allowances for home businesses versus commercial uses and the controls/limitations placed on each of these.

Short Term Rentals – We will discuss controls on short term rentals and in particular the idea of not allowing this use entirely within these districts.

### **Module 3 – Zoning Ordinance**

This Module includes the proposed Articles 5 and 6 for the new zoning ordinance. In the current Charlottesville Code of Ordinances, related topics are covered in Chapter 29 (Subdivision) and throughout Chapter 34 (Zoning). Article 5 (“Subdivision and Development Plan Standards”) lays out requirements for site planning, for both sites that involve subdivision and those that do not while Article 6 (“Administration”) lays out the processes for applying the rules in the ordinance. This includes common review procedures for zoning decisions such as development plan reviews, text amendments, rezonings, or variances. It also provides rules for

nonconformities and enforcement of the code. Module 3 can be viewed here: [https://drive.google.com/file/d/1Z7wloj-9RNhAMAK5Hht\\_OMi6UQvtIIFT/view](https://drive.google.com/file/d/1Z7wloj-9RNhAMAK5Hht_OMi6UQvtIIFT/view) . The orientation video that walks through the draft can be viewed here: <https://www.youtube.com/watch?v=-ZCMkLbXpUg>

### Major Proposed Changes

#### Article 5 (“Subdivision and Development Plan Standards”)

– Combines Standards: Now includes standards for both Development Plans and Subdivisions. These were previously contained in separate Articles within the Code of Ordinances. Everything for site planning is now in one place, whether the project is subdivided or single ownership. This includes some standards that were previously housed in Module 2, related to blocks, site access, and streets.

#### Article 6 (“Administration”)

– Entrance Corridors: Review for compliance with Design Guidelines will be administrative, with an ability to appeal to the Planning Commission.

– Development Plan instead of Site Plan: All additions and new construction have to go through Development Plan review, which is a zoning compliance check at the conceptual plan level. Then the developer can apply for engineering and building permits (stormwater, land disturbance, building, etc.)

– Tree Removal Permit: Addition of this permit ensures compliance with min. tree canopy requirements.

– Administrative Modification: Zoning Administrator can allow 10% modification to most dimensional requirements in the code for sites with unique challenges. This cannot be applied to standards such as density, height, development bonuses, or use standards.

– Public Process: Requirements for community meetings and public hearings in relation to development proposals are set according to state law – extra meeting requirements in the City’s current Zoning Ordinance are removed. The issue for discussion is whether additional public meetings beyond those required by law should be included in the Zoning Ordinance or whether they should be identified in the City’s zoning administration manual.

### Related Topics not Covered in the Proposed Zoning Rewrite

- Draft zoning update does not modify any existing design guidelines (for example: Entrance Corridors, historic districts).
- Processes related to building and stormwater permits are not covered in Chapter 34. Building permits are contained in Chapter 5 and processes related to stormwater permits are contained in Chapter 10.

## **Additional Resources**

This packet also includes additional memos containing information on items which have been discussed throughout the zoning review process. These include:

1. Equity in Zoning
2. Arlington “Missing Middle” Zoning Amendments
3. Infrastructure Capacity



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Michael Rogers, Interim City Manager

**From:** James Freas, Director, Neighborhood Development Services

**Date:** July 7, 2023

**Re:** Zoning and Equity

**CC:** Sam Sanders, Deputy City Manager for Operations  
Ashley Marshall, Deputy City Manager for Diversity, Equity, and Inclusion

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As we approach a complete draft of the proposed new zoning ordinance, I believe it would be helpful to pause and reflect on one of the City's primary objectives for the new zoning ordinance, as stated in our Affordable Housing Plan and Comprehensive Plan.

It has been said that the purpose of this work is to create affordable housing, yet the adopted Affordable Housing Plan and Comprehensive Plan clearly identify racial equity as a primary purpose of the proposed land use and zoning proposals. Affordable housing is one high priority strategy that impacts racial equity but is not the only objective (Excerpts of these plans in Appendix 1). The following review will highlight the racial equity issues presented by Charlottesville's existing zoning ordinance and how the proposed ordinance addresses these issues.

First, it is important to note that in addressing racial equity in zoning the City is attempting to create opportunities for members of our community who have been subjected to discrimination – it is an attempt to correct past wrongs and fix systemic inequality. In doing so, we are also creating opportunities for all. The experience of communities that have adopted an equity framework shows that when we make the system work for those most disadvantaged, we ultimately improve the system for all<sup>1</sup>.

Second, we must remember that while equity is one of the core driving objectives of the entire Cville Plans Together project, it is not the only objective. These plans, policies, and rules are also intended to address the City's climate goals, economic development, historic preservation, and other important City objectives. Equity, however, is purposefully interwoven throughout.

The proposed zoning ordinance takes significant, and critical, steps towards racial equity in Charlottesville and is in line with national best practices and the recommendations of thought

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<sup>1</sup> Government Alliance on Race and Equity (GARE) – [www.racialequityalliance.org](http://www.racialequityalliance.org)

leaders on this topic (see resource list below). However, there is room for debate on the specifics and opposition to this draft zoning ordinance does not inherently make a person a racist. We hope, however, that providing information to increase everyone's understanding of the equity issues in zoning, which derive from the beliefs of people during the time period most zoning was adopted, will lead to greater appreciation of the purpose of the proposed changes in this zoning ordinance and a deeper consideration of the ongoing harms of the current system.

## **The Equity Issues of Zoning**

The widespread adoption of zoning throughout the United States from the 1920s into the 1960s represented a radical change to how families and individuals gained access to property-ownership and the associated wealth building opportunities. In short, this new system reserved those opportunities for middle class and wealthier families by limiting how property could be used such that generally only those with access to wealth could afford to purchase property. Other mechanisms were then used to limit or prevent Black, Indigenous, and People of Color (henceforth "BIPOC"<sup>2</sup>) families from accessing or retaining wealth. We will review some of those mechanisms below.

### Single Family Zoning

Single Family zoning is one of the more effective zoning tools for racial exclusion. The effectiveness of single-family zoning to this end lies in the fact that it restricts home financing to loans based on wealth and job-income. Traditionally, in American cities, residents who were low-income, immigrants, or African Americans could secure a property or home through property-based income like accessory rental units, boarders, or a range of commercial uses. Single-family zoning stripped out these other uses, eliminating potential income streams through ownership of property. So essentially, one had to be able to afford the luxury of a non-productive asset to own a home. Further, in its earliest iterations, the Federal government actively subsidized the ability of people to afford non-productive housing but denied those subsidies to African Americans, as well as other residents of color through redlining and similar tools.

Later, when overt discrimination in lending was outlawed, those subsidies were reduced, and zoning relied on other mechanisms to make it more difficult for residents with low incomes to secure a home in these single-family neighborhoods. Most effective of these are large minimum lot sizes and other mechanisms reducing the efficient use of land in order to drive up the per housing unit costs. In addition, zoning was used to impact the allowances for home-based businesses; they were generally restricted to professional jobs like lawyers, accountants, etc. Significantly, the land area set aside for these restrictions represented the largest land area in

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<sup>2</sup> For more information on the acronym BIPOC: <https://www.cbsnews.com/news/bipoc-meaning-where-does-it-come-from-2020-04-02/>

each community, frequently between 50 and 70% of a given community, as it is in Charlottesville.

### Multi-Family and Commercial Zoning

The inequitable zoning strategies in multi-family and commercial zoning districts are similar to those above, relying primarily on mechanisms to make the land and construction cost more expensive and out of reach of anyone without access to substantial capital. Again, minimum lot sizes were a methodology utilized, but also lot area per unit, open space, and parking requirements were used to make land development more inefficient. Finally, long and difficult permitting procedures added to the costs and introduced politics into the development process.

Through these zoning rules, cities like Charlottesville effectively eliminated small-scale, local, neighborhood-based, or entrepreneurial development. Where once, developing a piece of property might have been a one-time means for an individual to, for example, secure a storefront with a home above or in the back, now development is almost exclusively executed by professional developers with access to high amounts of capital doing large-scale, high-impact development projects.

### **How Charlottesville's Proposed Zoning Addresses Equity**

Charlottesville's proposed zoning addresses racial equity most directly by reducing or eliminating the regulatory mechanisms with demonstrated inequitable outcomes. In each instance, the team working on this ordinance has attempted to balance the community benefits that might be associated with these regulations while striving to improve the equitable outcomes of enforcement of the zoning ordinance. The primary result has been to eliminate or reduce those requirements that have an exclusionary effect through increases in the cost of housing and the reduction in opportunity. The list below highlights many key changes:

- Reduce (but not always eliminate) minimum lot size requirements
- Allow commercial uses in all districts (with limitations/constraints)
- Allow multi-family and accessory units in all residential districts (within limits on the scale to address compatibility)
- Eliminate minimum parking requirements (understanding that this will require new regulation/management of on-street parking).
- Eliminate the use of the word "family" as a regulatory tool.

Yet, it is important to note that there are a number of requirements that might continue to have impacts on equity due to increased compliance costs that were kept because of associated community benefits for all:

- On-site open space requirements
- Tree canopy requirements
- Entrance Corridor design review
- Transportation Demand Management (TDM) requirements

## **Resources**

There are a number of resources that dig deeper into the issues presented above. A short list is presented below:

- *The Color of Law: A Forgotten History of How Our Government Segregated America*; Richard Rothstein; 2018
- *Equity in Zoning Policy Guide*; American Planning Association; 2022
- *Zoning and Segregation in Virginia: Parts 1 and 2*; McGuire Woods Zoning and Segregation Working Group.
- *Arbitrary Lines: How Zoning Broke the American City and How to Fix It*; M. Nolan Gray; 2022.
- *The Sum of Us: What Racism Costs Everyone and How We Can Prosper Together*; Heather McGhee; 2021.



## Appendix 1

### **Affordable Housing Plan, 2021**

#### **Vision**

The City of Charlottesville will achieve a local housing market that is healthy, high quality, affordable, and above all, **equitable**.

#### **Introduction**

The Affordable Housing Plan is a framework to guide affordable housing policy and investments to increase the impacts of the City's policies and programs, remove barriers to access, and **advance racial equity** in housing in Charlottesville.

Single-family zoning, which is prevalent in Charlottesville, has historically been a tool to create and reinforce racial segregation in Charlottesville and nationwide and has restricted the development of housing, contributing to rising housing costs. The Land Use chapter of the Charlottesville Affordable Housing Plan outlines recommendations to address the legacy of exclusionary zoning and constrained housing supply in Charlottesville. The Comprehensive Plan Update and Zoning Code Rewrite will build on these recommendations.

#### **Guiding Principle**

**racial equity** – defined as: Housing policies and programs and decision-making processes must be intentionally designed to overcome the City's history of **racial segregation and its ongoing inequities**.

### **Comprehensive Plan, 2021**

#### **Land Use Vision**

Through the City's plans, policies, and regulations, including zoning, Charlottesville will increase the supply and affordability of housing, will work to address **inequities** related to the distribution of land uses and impacts of development.

#### **Strategies**

*Strategy 1.3: Implement zoning changes needed to support the creation of more housing, including affordable housing opportunities, throughout the city.*

*Strategy 1.4: Define parameters for inclusionary zoning policies, which require that certain residential developments include some affordable homes. Set targets for the number and affordability levels of homes as well as other parameters.*



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**To:** Mayor Llyod Snook and the Charlottesville City Council  
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Michael Rogers, Interim City Manager

**From:** James Freas, Director, Neighborhood Development Services

**Date:** July 7, 2023

**Re:** Comparisons to Arlington's recently adopted zoning

**CC:** Sam Sanders, Deputy City Manager for Operations

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On March 22<sup>nd</sup> Arlington County adopted its "Missing Middle" zoning package (also known as Expanded Housing Opportunity – EHO – development). The following is a summary of the key factors of the EHO zoning amendments (a complete list of the adopted zoning changes is attached):

1. Allow up to six units on residential lots previously restricted to only single-family homes.
2. New missing middle housing can be no larger than what is allowed in the existing single-family zoning.
3. Each EHO development must provide a certain number of trees.
4. The number of EHO development projects is capped at 58 per year.

A key factor to understand about Arlington's EHO development ordinance is that the package of zoning amendments is a parallel zoning district. A parallel zoning district is one in which there are effectively two choices of zoning rules available to the property owner, each a discrete set of rules. In this case, the pre-existing single-family zoning is available or the EHO development zoning that is described above. Arlington has taken this approach before where the County was modifying the existing zoning ordinance to allow for greater density. Practically, this approach has allowed them to readily incorporate a set of inter-related rules into one package for adoption, but it also makes the ordinance itself more complex for the everyday user.

### **Six Units Allowed**

The EHO Development zoning district was a product of the Arlington County Missing Middle Study. This study was initiated to address the issue of housing supply and choice in Arlington's neighborhoods. Much like Charlottesville, the County recognized that housing supply was an issue contributing to rising housing costs and also, that across many neighborhoods of the County, there is a lack of housing choice – that is, a lack of options for homes of varying styles

and price points. The Missing Middle Study concluded that the County should allow a greater range of housing types in what had previously been single-family only neighborhoods. The initial proposal was to allow up to 8 residential units on all previously single-family lots. The adoption process led the county Board of Supervisors to go forward with up to 6 residential units allowed.

Like Charlottesville, Arlington conducted a study of how the proposed zoning might affect the residential market – ie. a rate of change analysis. Ultimately the conclusion of that study was that the County could expect between 19 and 21 EHO Development projects per year and that these projects would successfully diversify the price points for new residential construction in county neighborhoods. Current new single-family homes in Arlington sell for over \$1.8 million while missing middle units would range from \$430,000 to \$1.5 million based on size and location. As with Charlottesville’s study, the limiting factors on the development of new missing middle homes is the limited availability of lots in a given year, lack of familiarity in the development community with these building types, and the continued strong sales of single-family homes.

#### Single-Family Scale

As in Charlottesville, Arlington’s goal was to ensure that new homes built under the EHO Development district provisions would be house scaled. The approach the County took was to limit the new missing middle homes to the same footprints and scales as the single-family homes otherwise allowed in the zoning. This approach was the same as taken by Minneapolis, where it is believed to have severely limited the development potential for missing middle units. Arlington was confident of not getting the same result because the County’s existing zoning generally allows for very large homes to be built, with most new single-family homes developed being between 4,000 and 7,000 square feet. Such large buildings can readily accommodate multiple units, which their study estimated to be between 700 and 2,500 square feet.

The Charlottesville draft zoning is taking the approach that all new residential buildings in the R-A, R-B, and R-C districts should be house-scaled and compatible with a generally single-family scale neighborhood. The significant majority of the buildings in these districts will remain single-family over time. This objective for house-scaled buildings is achieved by the limitations on the building coverage, height, and massing. Entrance requirements, transparency (window) requirements, and restricting parking from the front yard are rules that also contribute to the degree to which new buildings will fit into the existing neighborhoods (and Arlington also adopted some of these rules as well for the same reason). The table below compares the requirements in the current single-family districts (R-1, R-1S, R-1U) to the requirements in the proposed ordinance (R-A, R-B, and R-C).

	<b>Current Ordinance</b>	<b>Proposed Ordinance</b>
Height	35 feet (generally allows 3 stories)	R-A - 2.5 stories (32 feet) R-B – 2.5 stories (32 feet) R-C – 3 stories (44 feet)
Building Coverage (max)	NA	R-A – 55-60% R-B – 60 to 65% R-C – 65%
Massing (building width) Primary street	NA (defined by setbacks)	R-A – 35 feet R-B – 40 feet R-C – 70 feet

As detailed in the attachment, the Arlington ordinance also includes maximums for the gross floor area tied to the type of missing middle housing. For example, duplexes were limited to no more than 4,800 square feet while 5 or 6 unit buildings were limited to 8,000 square feet. These numbers are all within the scale of a large house, as is currently being built in Arlington, as noted above.

Tree Requirements

Arlington sought to increase the tree requirement associated with these EHO Developments. Based on the size of the project, the ordinance requires a greater number of trees - for 2-4 units: require a minimum of 4 shade trees and for 5-6 units: require a minimum of 8 shade trees.

This requirement has been challenged in a lawsuit. The basis for that challenge is that the state defines how municipalities can regulate trees as part of new development. State code § 15.2-961 allocates a maximum tree canopy that a municipality can require based on the land use. Charlottesville has maximized our canopy requirement under the state code. The Arlington proposal exceeds that state allowance. Arlington is relying on generalized additional authority to regulate trees/vegetation granted as a Chesapeake Bay Community.

Annual Development Cap

The annual development cap is tied to the EHO District, thus restricting the number of permits that can be issued in that district. There is no clear state enabling legislation allowing a development cap, legally the County is relying on the general authority to enact zoning. The County has used a development cap in the past when they adopted an accessory dwelling unit ordinance (that cap was later removed). The current proposal is for no more than 58 EHO Development projects per year with a sunset after five years.

Currently, the Charlottesville zoning rewrite does not include a proposal for a development cap. Were the Commission and Council interested in incorporating an annual cap, it would need to

be tied to a clearly discernable permit type. As noted, the Arlington example ties the development cap to building permits granted under the rules for the EHO Development district, a parallel district that only governs missing middle type development. The cap is further specified by limits associated with each of the underlying zoning districts. A similar provision in the Charlottesville ordinance might place the development cap on new construction building permits for multi-unit structures in the R-A, R-B, and R-C districts.

The development cap in Arlington was based on 1/3<sup>rd</sup> of the number of the new construction building permits granted in the single-family districts in a given year. This number is well above the estimated number of projects the County expects based on their market analysis. The cap is set up to favor the construction of single-family homes over smaller unit, multi-family homes.

Overall, Arlington and Charlottesville have had similar objectives in their respective zoning work – to diversify the housing options available in previously exclusionary zoning districts in order to allow for a range of housing choices at various price points and meeting different household needs. Both were explicitly addressing the equity issues raised by single-family zoning. Charlottesville’s effort was embedded in an overall comprehensive planning process and includes a rewrite of the entire zoning ordinance, addressing its overall useability and a range of other issues. Arlington’s approach has been single-issue beginning with a study focused on the issue of allowing “missing middle” housing options across the county followed by a targeted zoning amendment.

Staff is happy to follow up if there are any questions.

**Attachment:**

The following summary was provided by Arlington County

- **Uses:** Allow up to 6 units on a residential lot (duplexes, townhouses, and multiplexes with 3-6 units)
- **Applicability:** Allow EHO development by right on properties in the R-20, R-10, R-8, R-6, and R-5 districts
- **Annual Development Cap:**
  - Set an annual cap of up to 58 permits with the following distribution method:
    - 21 permits total spread across R-8, R-10, and R-20 districts
    - 30 permits in the R-6 district
    - 7 permits in the R-5 district
  - Set a five-year sunset of the annual cap
- **Maximum Lot Coverage:** Duplicate base lot coverage standards for single-detached homes and provides additional allowed coverage even if a detached garage is not built
- **Parking**
  - Vary parking requirements based on transit proximity
    - At least 0.5 parking spaces per unit on sites located entirely within a 3/4-mile radius of a Metrorail station entrance or within 1/2-mile radius of a transit stop along the Premium Transit Network
    - At least 1 space per dwelling unit for all other locations—including those residential lots fronting on a cul-de-sac in transit-proximate areas
- **Trees:**
  - For 2-4 units: Require a minimum of 4 shade trees
  - For 5-6 units: Require a minimum of 8 shade trees
- **Minimum Site Area:**
  - For 2-4 units: Set minimum site area to the same standards for single-detached homes in all districts

- For 5-6 units:
  - Set minimum site area to the same standards as single-detached homes in R-6, R-8, R-10, and R-20 districts
  - Increase the minimum site area to 6,000 square feet for the R-5 district
- **Gross Floor Area:**
  - Set the maximum floor area based on the housing types and/or unit type at the following square footage:
    - Duplex: 4,800
    - Semidetached: 5,000
    - 3 townhouses: 7,600
    - 3-unit multiplex: 6,000
    - 4-unit multiplex: 7,200
    - 5- and 6- unit multiplex: 8,000
- **Accessory Dwellings:** Allow accessory dwellings (ADs) only in two scenarios (interior units within a townhouse or semi-detached home, exceptions for pre-existing ADs)
- **Design and Site Layout Guidelines:**
  - Make the maximum building height, footprint, and minimum setbacks for EHO development the same as currently exist for single-detached homes
  - Require EHO development to comply with site layout and design standards for compatibility with surrounding neighborhood



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Michael Rogers, Interim City Manager

**From:** James Freas, Director, Neighborhood Development Services

**Date:** July 7, 2023

**Re:** Infrastructure Capacity

**CC:** Sam Sanders, Deputy City Manager for Operations  
Lauren Hildebrand, Director, Utilities  
Stacey Smalls, Director, Public Works

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In November 2021 the Charlottesville City Council adopted an ambitious new Comprehensive Plan with a wide range of strategies addressing the City's goals relative to land use, transportation, environmental protection, and other topics. Significantly, this plan, along with the adopted Affordable Housing Plan, focused on the inter-related issues of housing production and affordable housing. The strategies for these goals steer the City towards regulations that allow more housing production, so that the City's housing stock can absorb more of the demand for housing and towards that housing production being distributed throughout the City, so that all neighborhoods share in that growth. That potential for increased housing production also creates more opportunity for the development of subsidized affordable housing and that distribution of development opportunity throughout the City means that there is potential for economic integration in all neighborhoods. Overall, this aspect of the City's affordable housing strategy is inherently incremental, meaning that it is addressing long term regulatory constraints on the housing market's ability to respond to changing market conditions (demand) and is unlikely to produce rapid change in the existing housing market.

While change in Charlottesville's existing neighborhoods will be slow, the appearance of a regulatory change where greater intensity of land use is allowed all at once has generated concern for the City's infrastructure capacity, particularly in places where development to date has only allowed for single residential unit buildings. And for individuals who do find a larger development project than was previously allowed proposed for their street, they will want assurances that the City's infrastructure can handle the new growth.

The rate of change analysis in the August 2022 Inclusionary Zoning report anticipates a maximum of approximately 1,300 net new units over the next three years across the proposed Residential A, B, and C zoning districts, which comprise the majority of the City's land area. These units would be spread across a range of development types including accessory apartments, duplexes, and townhouses (likely the most common where sufficient land area permits). As noted above, this estimate represents a



theoretical upper maximum used for planning purposes rather than a likely outcome as other factors make a realistic housing production number both lower and more difficult to predict as outlined in detail in the report <https://drive.google.com/file/d/1ctsx38UFZU0xiDn0rubby6WHEKQrNnNA/view> beginning on page 32).

The following memo describes how the City addresses the issues of infrastructure capacity through planning and the review of development proposals. The memo looks at water, sewer, stormwater, and transportation systems.

### **Water System**

The City of Charlottesville Department of Utilities maintains the water distribution system (179 miles) and Rivanna Water and Sewer Authority (RWSA) maintains the water transmission lines and treatment plants. The City of Charlottesville and RWSA has been investing in a robust program of system modernization and redundancy for approximately 15 years that will position the City for growth. The following factors ensure the City's and RWSA's water system can handle capacity needs in the future:

- The Department of Utilities is implementing a Capital Improvement Program (CIP) that addresses aging infrastructure and improves the reliability of the water system. As part of the water line replacement program, a comprehensive analysis of the system is completed and a list of priority projects is created and updated on a regular basis. Approximately two miles of water line is replaced yearly based on a condition and to date, 21.2 miles or 11.8 % of the water lines have been replaced
- During the implementation of the water CIP, system modeling is utilized to confirm system capacity. With each replacement project, the sizing of the replacement pipe is considered, generally replacing 6-inch lines with 8-inch lines. The primary driver of capacity need in this case is fire suppression services, which require the potential for a high rate flow should a fire occur. A secondary benefit of this need though is an ample supply of water capacity available, thus, serve new growth. In addition, by installing new water lines, the City has been creating loops within the system which improves the overall reliability and capacity of the system.
- Water Facility Fees were developed and established for the City in 2008. Facility fees are one-time charges levied to offset existing or planned future capital costs necessary to meet the service needs of City water customers. These fees are assessed when new water service is requested where none has previously been provided, or an increase in capacity where service already exists, water facility fees are charged for this new increased demand for system capacity.
- RWSA updates a long-range plan focusing on regional water supply and transmission every ten years with a 50 year time horizon. One of the key findings of this plan is that, despite robust population growth over the last 20 years, actual water usage has remained essentially the same, reflecting dramatic drops in per capita water usage over this time period. Thus, there is substantial capacity for continued growth and, with the

long time horizon and frequency of planning work, the authority will readily stay ahead of any increase in demand. <https://www.rivanna.org/community-water-supply-plan/>

- As part of implementing the RWSA's long range plan, the authority has a number of significant infrastructure projects at various stages of development. Most important to the City is the Central Water Line project, which will interconnect the overall regional water system, allowing water from all sources to reinforce demand, building greater system redundancy. Also important are plans to construct the South Rivanna Reservoir Water Line to Ragged Mountain Reservoir Water Line Project which improves system reliability and operational flexibility and to increase the height of the dam at the Ragged Mountain Reservoir, thereby increasing available supply.

### **Sewer System**

The Charlottesville Department of Utilities maintains 169 sanitary sewer lines. RWSA maintains larger sewer lines and operates the wastewater treatment plant. Similar to the water system, the sewer system benefits from upgrade planning by both the City and the RWSA. There are currently no capacity concerns based on system conditions – the greater issue is the age of the system and the need for continuous rehabilitation or replacement to protect the local environment. The Charlottesville Department of Utilities has been very successful in this regard, to date having replaced 35% of the system, with ongoing rehabilitation or replacement plans going forward.

The City's sewer system is composed of 8-inch to 30-inch sewer lines, and has capacity for growth. The City's sewer system flows into RWSA's larger sewer lines and these lines take wastewater flows to the Moores Creek Advanced Water Resource Recovery Facility. As with new or expanded hook-ups to the water system, a Sewer Facility Fee is levied on new and expanded sewer service to contribute towards sewer system capital costs.

The City and RWSA install permanent and temporary flow meters within their respective sewer systems to monitor capacity within the pipe, changes in wastewater flows, and extraneous water that may enter the pipes during a rain event. This extraneous water is known as inflow and infiltration, and an excess amount of inflow and infiltration is an indication the sewer lines need to be assessed for system deficiencies. In addition, like the water system, RWSA updates a long-range plan every ten years that focuses on capacity within their sewer system and treatment plants.

### **Stormwater System**

The stormwater system is composed of piped and open channels that convey stormwater runoff to outfalls into the City's streams and the Rivanna River. The primary objective of the City's stormwater system planning efforts is to address existing locations where the system fails to handle current levels of stormwater based on historical development and system design. The goal of these projects is to address localized flooding or drainage issues as well as reducing environmental impacts of erosion and pollution. Unlike water and sewer systems, where future growth might necessitate capacity expansion, in the case of the stormwater system, the focus is

on regulatory solutions that require on-site treatment rather than piped systems that allow conveyance. In other words, the best place to manage stormwater is where it originates.

The City's stormwater ordinance requires that onsite facilities be designed to manage stormwater generated up to a 10-year storm. A 10-year storm is a storm with a 10% chance of occurring in any given year. Thus, done correctly and in accordance with the law, there should be no substantial increase in stormwater runoff from new development, where the development impact is greater than 6000 square feet, thus having a minimal effect on the capacity of the stormwater system.

### **Transportation System**

Planning for the City's transportation system is very different than the water utilities described above. While relatively simple models, coupled with basic physics, can be used to predict the need for upgrades, transportation involves a greater degree of choices both political and individual, influenced by a range of economic, psychological, and sociological factors, that make the system complex, and therefore less predictable. The solution then is to rely less on attempting to make predictions and more on the simple idea that complex systems thrive with diversity; the idea that we must maximize system choice so that people are able to make the optimal decisions for their transportation needs.

The City's transportation planning efforts over the last decade have emphasized the need for multi-modal transportation improvements – particularly transit, bikes, and walkability. This emphasis is essential for these modes to be viable choices as each must be made to be more reliable, comfortable, and, most importantly, safe. Past focus on automobiles as the primary transportation mode has weakened the overall system and compromised the safety of the other modes of transportation. An emphasis on supporting transit, bikes, and walkability also aligns with the community's goals for addressing climate change.

Staff across the planning and engineering divisions of NDS and DPW respectively, as well as CAT, are now working towards a pipeline of projects to enhance the overall transportation system. This pipeline now includes a project prioritization process, building our capacity to do planning studies (strategically deciding what to do), creating quick-build programs that will allow us to act faster to address safety issues (as we did with safe routes to school in the last year) and building greater capacity to implement projects more efficiently and effectively once they are designed and funded (added project managers). In the next few years there will be new local and regional transit plans designed to improve that service as well as new planning for street users through the federally funded Safe Streets and Roads for All planning and expanded federal funding program.

Allowing for the opportunity to develop more housing choices in the City is an important part of the City's transportation planning program. Put simply, greater residential density provides greater transportation choice to more people. As the regional population grows, if more and more people are required to live further and further from the job centers of Charlottesville, those people lose transportation choice. Generally, the only option becomes a private vehicle and with a sprawling development pattern, those cars can only be served with larger roads that

necessarily and predictably increase congestion and reduce safety for those walking or biking (including walking to transit).

The critical component of transportation system planning is taking action to enhance transportation choice. For every trip an individual makes, they have a choice in terms of the time at which to make that trip, the mode by which to make that trip, and the route to take. That choice is influenced by the relative safety of the options available, economic/financial concerns, and social/psychological considerations. The objective of our system planning must be to maximize the choices available. Significantly, the pandemic has accelerated use of a new “transportation mode” that is now a major component of the system – the ability for certain job types to work virtually, which is now requiring new perspectives and models for transportation planning.

The 2002 drought spurred a new and proactive water system planning effort with regional and local efforts that place Charlottesville at the forefront for the industry. Similarly, concern for climate change and equitable housing policies must now spur a proactive transportation system planning program focused on enhancing choice for all residents.

### **How Does the Review of Development Projects Fit Into Infrastructure Planning?**

The availability of infrastructure is a basic component of a given location’s site conditions. Just like steep slopes, waterways, and soil types, the availability of infrastructure is part of the unique site conditions that a developer must consider as part of their costs of development. Where the necessary capacity does not exist, a developer must either pay for the provision of that capacity or consider changes to their project that otherwise bring it within the available capacity limits.

For water and sewer infrastructure, the potential water and sewer demand of a development project are assessed against the available capacity. Where the capacity does not exist, the developer must solve the issue. The City will work with a developer to determine if the water and sewer lines are already identified for replacement. If so, the City will share the cost such that the developer is only paying for the additional capacity necessary for the project while the City is covering the replacement cost it would otherwise still have had to pay. The water and sewer line capacity in the City is sufficient, but in some cases a water or sewer lines do not exist to accommodate a developer’s plans and the developer will have to add the necessary infrastructure. As noted above, stormwater is expected to be handled on the development project site according to stormwater management regulations and the on-site infrastructure is sized accordingly. As has been noted previously, staff is proposing a comprehensive review, coordination, and update of City regulations governing stormwater management for development.

The potential impacts of a development project on transportation infrastructure are inherently more difficult to assess. As with other infrastructure, transportation impact models are used. Based on national standards, these models tend to assume heavy reliance on automobiles and that there will be an increase in automobile use that must also accounted for. Even so, street

capacity is so much greater than people anticipate and even with the inherent biases of the models, the outcomes frequently show minimal impacts on the transportation system, except for the largest projects. Under Virginia law, in order to require that a developer cover the cost of an infrastructure improvement, it must demonstrate that the infrastructure is necessary as a result of the development project, and it is very rare transportation improvements will be required in Charlottesville.

Given that optimizing the City's transportation system requires a focus on promoting greater transportation choice, the new zoning ordinance will include a number of measures. Most important of these is removing the minimum automobile parking requirement, which by design promotes the use of automobiles over other modes, contrary to the objectives of the City. By contrast, the draft ordinance has robust minimum bike parking standards to promote the use of this transportation mode. Finally, large projects will be required to provide a transportation demand management (TDM) plan demonstrating the infrastructure and programmatic steps that will be taken to manage the transportation needs of the development project, with the goal of maximizing transportation choice for the residents, tenants, or customers of the project. Such a TDM plan would include any of the following: parking for a range of transportation modes (cars, scooters, bikes, etc), shared transportation, facilitation of transit access, shuttles, showers, and any number of other approaches. This approach is designed to promote multi-modal transportation choices in every large project.

### **Conclusion**

Charlottesville's infrastructure systems have sufficient existing capacity to handle the likely development that could occur under the new zoning ordinance, in support of the City's adopted Affordable Housing and Comprehensive Plans. The rate of change analysis in the August 2022 Inclusionary Zoning report anticipates a maximum of approximately 1,300 new units over the next three years across the proposed Residential A, B, and C zoning districts (currently being updated), which comprise the majority of the City's land area. As noted above, this estimate represents a theoretical upper maximum used for planning purposes rather than a likely outcome as other factors make a realistic production number lower. Further, the robust infrastructure planning program, both in the City and in conjunction with regional agencies, are well structured to prepare for the City and the region's needs going forward.