ROCKINGHAM
COUNTY
VIRGINIA

# STONE SPRING
# URBAN DEVELOPMENT AREA PLAN 2024

*A Conceptual Land Use Guide*

Michael Baker
INTERNATIONAL

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# STONE SPRING UDA PLAN

*DISCLAIMER: The conceptual maps in this Plan are tools to help understand how design concepts can be applied to a street network and possible development. Due to their conceptual nature, specific topography and natural geographic features were not considered during the creation of these maps.*

# EXECUTIVE SUMMARY

## WHAT'S AT STAKE?

The population in Rockingham County (County) is projected to increase by less than 1 percent annually between 2020 and 2040, according to the Weldon Cooper Center for Public Service. With population growth comes the need to appropriately plan for residential and commercial development, while minimizing the impact to the County's agricultural areas. This planning approach focuses on compact development to reduce land consumption and infrastructure costs, and to maximize the efficient provision of services. It is often referred to as Traditional Neighborhood Development (TND).

Suburban development is not an efficient use of land or infrastructure. Land uses are separated, requiring more vehicle trips, vehicle miles, linear feet of infrastructure, and public services. Building setbacks result in large lots with housing spread over many acres, and commercial parking lots located between buildings and the street, thereby discouraging walking between uses. This type of land-consumptive development is not sustainable, nor does it protect the County's agricultural areas.

## HOW WE ADDRESS THE ISSUE

In 2016, Rockingham County was awarded a grant to fund the creation of the 2020 Stone Spring Urban Development Area Plan (UDA Plan). With assistance from Michael Baker International and the guidance of a UDA Advisory Committee, stakeholders, and staff, the adopted UDA Plan provided a 20-year vision for the careful development of walkable mixed-use neighborhoods.

The key elements of the vision were crafted by input from the UDA Advisory Committee through a series of exercises that determined the most important design and streetscape elements to include in this plan. Results of these exercises are provided in this executive summary, in section C. The Planning Process, titled "What Design and Streetscape Elements are Most Important to You?" The results provided the foundation for creating neighborhood principles, design, and streetscape guidelines for the Stone Spring UDA. This 2024 UDA Plan reaffirms, with minor modifications, the 2020 UDA Plan.

The Stone Spring UDA Plan functions as a conceptual land use guide for neighborhood development based on traditional town patterns, known as Traditional Neighborhood Development (TND). TND is based on the principle that neighborhoods should be walkable, achieved by compact, mixed-use development, with pedestrian-oriented development blocks that are sized for easy walking distance and characterized by an interconnected network of streets that are articulated with trees, on-street parking, and a variety of routes for vehicle traffic while facilitating walking, cycling, and transit. The UDA Plan focuses on the physical form and massing of buildings, scale, block size, and the relationship between building edges and the public realm.

The arterial roads, US 33, Stone Spring Road, and Port Republic Road, that bisect the UDA, are designed, and guided by standards which prioritize mobility over access points. Access points to these roads need to be spaced as defined in VDOT Road Design Manual Appendix F and should be strategically located to maintain vehicle throughput while also providing multi-modal connectivity.

## THE CHALLENGE

It is difficult to forecast just how much the market for TND real estate is growing in the County, but the size of the market likely will be increasing during the next 20 years. Consumer demand for TND is based on demographic trends and changing buyer preferences based on e-commerce trends. Diminishing traditional big-box retail stores across the country and changes in the shopping experience show a demand for mixed-use developments that include public amenities, such as event and recreation space and a variety of dining opportunities. Local TND examples include Daleville Town Center and One Loudoun in Botetourt and Loudoun Counties, respectively.

A detailed 2012 report by George Washington University's Center for Real Estate and Urban Analysis, in partnership with the Urban Land Institute, revealed how walkable urban places and projects will drive tomorrow's real estate industry and the U.S. economy. Walk Score, a private company that measures walkability across the United States has found that communities that receive a high score see a 5 to 8 percent increase in building and property values.

The National Association of Realtors periodically distributes surveys to ask survey-takers, if they were "moving to another home, in what kind of community would they like to live." In 2015, 49% said they wanted to live in a home with a small yard where it is easy to walk to the places they need to go; in 2023, 56% said this was their preference. In the 2015 survey, 42% said they preferred a home with a large yard where they drove to the places they need to go and, in 2023, 44% showed this as their preference. These preferences reinforce the importance of this UDA Plan protecting the existing suburban areas while providing walkable compact mixed-use areas.

A 2020 report from the National Academies of Science, Engineering, and Sciences' Transportation Research Board states that "how communities develop can have many direct and indirect impacts…Compact, multi-modal development…reduces land consumption and the distances between destinations.

This, in turn, reduces the costs of providing public infrastructure and services, improves accessibility, and reduces motor vehicle travel, which provides many economic, social, and environmental benefits."

Recently completed developments in Botetourt County at the Daleville Town Center and One Loudoun in Loudoun County, provide examples for a new direction and opportunity. Both demonstrate a real home-grown desire for creating neighborhoods with a mix of uses that are walkable and are planned around parks and trails.

Perhaps the biggest challenge is quantifying financing of TND, from land acquisition to construction financing. Critical financial issues that affect the implementation of the Stone Spring UDA Plan include:

- Assembling a large quantity of land is costly.
- TND requires dense (usually quarter-acre lot) residential blocks with an internally oriented neighborhood and enough people to help support the commercial and civic function to get the proforma to work. The good news is that the cost of land in the Stone Spring UDA is much more affordable than denser cities and counties: however, it is more costly than in other areas of the County.
- Lender avoidance of risk in untested markets makes financing innovative development difficult.
- Lenders are less cautious in markets, such as northern Virginia, that have higher levels of density, income, and a defined transportation network that enables greater connectivity between employment and residential centers. As already noted, recent TND developments in Botetourt and Loudoun Counties lend supportive evidence that the market is changing in this area for this type of product. It may take a developer with experience implementing TND development in transitioning markets.
- The process of amending a zoning ordinance to accommodate TND can be costly, time-consuming, and include unknowns.

To overcome this challenge, the Stone Spring UDA Plan proposes specific design concepts and streetscape guidance that are essential for TND and offers a phasing strategy for amending the County's Zoning Ordinance.

## A 20-YEAR AREA PLAN AND VISION

Great neighborhood developments are not created overnight; they evolve over time. The Stone Spring UDA Plan is organized as a 20-year area plan, which is a component of the Comprehensive Plan, that provides an overall concept for development within the UDA, and recommendations for connecting commercial and residential uses with on- and off-road bicycle and pedestrian accommodations anchored with parks and activity centers. The Stone Spring UDA contains the following sections, which can act as stand-alone documents:

1. **10 Guiding Principles That Make a Neighborhood** (Page16) integrates the feedback from the advisory committee into 10 principles and articulates a vision for walkable neighborhoods to guide future development within the UDA.

2. **Form-Based Transects to Guide Future Growth** (Page 26) creates the physical context by defining a series of zones, with height and setback requirements, that progress from lower density areas to denser neighborhood centers.

3. **Neighborhoods Connected by Pedestrian and Bicycle Pathways** (Page 34) envisions a pedestrian and bicycle trails network connecting the focus areas (Stone Port, Stone Ridge, Boyers Crossing, Massanetta Springs, and Crossroads) where neighborhood growth is designated.

4. **Design and Streetscape Guidelines** (Page 45) provides guidance for architectural and streetscape design, based on best practices, describing more-detailed concepts for the built elements.

5. **Neighborhood Concepts** (Page 57) employs the form-based transect, design, and streetscape guidelines, to create neighborhood concepts for each of the focus areas:

   Stone Ridge
   Stone Port
   Boyers Crossing
   Massanetta Springs
   Crossroads

Glossary (Page 96)

The Stone Spring UDA is a high-level document that provides a guiding vision. The County will need to make plan refinements as it is implemented.

## RECOMMENDATIONS

Formalize the vision for the UDA through amendments to the zoning ordinance.

A. Refine the Form-Based Transects, with a focus on height and setback requirements, in a subsequent planning process. A deliverable of this phase could be specific zoning language for the adoption of the transects into the zoning ordinance for each of the focus areas: Stone Ridge, Stone Port, Boyers Crossing, Massanetta Springs, and Crossroads.

Prioritize design guidelines related to physical form and massing of buildings, scale, block size, and the relationship between building edges and the public realm. Per the Short-, Mid-, and Long-term Phase Diagram on page 24, design guidelines that relate to building and parking placement, as well as sidewalks are most appropriately addressed in Phase 1. The remaining guidelines can be phased, based on what is appropriate for then-current market conditions.

By adopting form-based transects and design, the County can have a more predictable design and character of development in the UDA. The result can be better utilization of land area and infrastructure, improved tax benefits, and lower capital costs. When correctly designed, the costs to the developers are returned with higher-value projects and greater marketability.

B. Update the development review process, as needed, so that development proposals are reviewed for consistency with the Comprehensive Plan, the Stone Spring UDA Plan, and the Zoning Ordinances.

## A. INTRODUCTION

The 2024 Stone Spring UDA Plan (UDA Plan) reaffirms the 2020 UDA Plan, with minor modifications.

The UDA Plan provides Rockingham County with a vision of how future growth can be accommodated while protecting rural and established suburban areas.

With guidance from a UDA Advisory Committee, County staff, and stakeholders, the 2020 UDA Plan established principles for guiding the creation of neighborhoods. A strategy to create transect zones to direct where more compact development could go and where it could transition to established single-family neighborhoods utilizes form-based design and streetscape guidelines based on the concepts of traditional neighborhood development (TND). TND embodies classic characteristics of traditional communities such as walkable neighborhood centers, interconnected streets and blocks, and diversity of land uses to guide development within the UDA. Conceptual illustrations show what future growth could look like when employing TND strategies.

## B. BACKGROUND

In 2007 the Code of Virginia (Virginia Code § 15.2-2223.1.) required certain localities to designate UDAs "sufficient to meet projected residential and commercial growth in the locality for an ensuing period of at least 10 but not more than 20 years." In 2012, the Code was amended to define UDAs more broadly and make them optional rather than mandatory.

Virginia Code §15.2223.1 requires UDAs to incorporate principles of traditional neighborhood design and, "to the extent possible, federal, state and local transportation, housing, water and sewer facility, economic development, and other public infrastructure funding for new and expanded facilities shall be directed to designated urban development areas or to such similar areas that accommodate growth in a manner consistent with this section." A primary purpose of UDA legislation was to improve the future efficiency of state-funded road construction and maintenance. Areas designated as UDAs in a local comprehensive plan have an additional level of potential eligibility for transportation funding from the State, because of its proximity to transportation facilities, redevelopment/infill potential, and higher density development that incorporate the principles of TND.

The County first designated a UDA in 2011; it was later expanded in 2015. This 2024 UDA Plan includes an additional, minor expansion of the UDA.

With each expansion, an evaluation was conducted of current land use, transportation, future development areas, and population projections within the designated UDA and County. The 2020 UDA Plan was adopted to address land use, streetscape design, and connectivity throughout the UDA, incorporate the principles of TND for new development, and included a Complete Streets approach intended to strike a balanced experience for all modes of travel (for vehicles, transit, pedestrians, and bicyclists), thereby creating a sense of place in the County's most rapidly growing area. This 2024 Plan does the same.

The 2020 UDA Plan benefited the County in promoting economic development and more effectively coordinating transportation and land use planning. The 2024 UDA Plan is expected to do the same.

Traditional Neighborhood Development (TND) typically includes a range of housing types, a network of well-connected streets and blocks, and a variety of public spaces, with amenities (such as stores) and schools within walking distance of residences.

A form-based transect defines a series of zones, with height and setback requirements, that transition from sparse rural farmhouses to the compact neighborhood centers. Each zone is fractal in that it contains a similar transition from the edge to the center of the neighborhood.

Complete Streets are a transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient, and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation.

## C. THE PLANNING PROCESS

In planning for future growth, the County's Comprehensive Plan recommends ways to help protect rural and established suburban areas with a transition to the areas that will become more compactly developed in the future. The Stone Spring UDA Plan, which functions as a subset of the Comprehensive Plan, focuses on the developing areas southeast of the City of Harrisonburg and recommends how and where future growth is most appropriate and how to shape it over the next 20 years to create memorable places with vibrant neighborhoods that are linked by a street network that moves pedestrians, cyclists, and vehicles as safely as possible.

The development of the 2020 Stone Spring UDA Plan was guided by the UDA Advisory Committee (Committee), County staff, and local stakeholders. The first questions asked by Committee members were, "How do we prime the pump? How do we get the process going?" Developing a process to answer that question started with the examination of the UDA, including recent development activity. A concurrent review of best-practice examples of greenfield development was undertaken to determine any common themes or strategies.

Significant investment has been made in the UDA, specifically with the Sentara RMH Medical Center and some of the recent development proposals along Stone Spring Road, Boyers Road, and Port Republic Road. These developments represent nodes of investments, and something to build on.

Located near these nodes are large tracts of land that could be designated for compact development. The UDA Advisory Committee considered density to be the number one issue to solve, because without density the desired retail and commercial uses will not be sustainable. At the first workshop exercise, participants were asked to place a green dot on a map of where development should go. The results overwhelmingly consolidated interest at the undeveloped parcels along Stone Spring Road at the intersections of Port Republic Road and US 33. From this exercise a total of five areas of interest were considered. Area 1, the intersection of Stone Spring and Port Republic Road, and Area 2, the intersection of US 33 and Stone Spring Road, are areas that can accommodate the most amount of density because of the developable land and consolidation of infrastructure investments along Stone Spring Road; Area 3, Boyers Road, was identified as a transition area where density would step down in scale from Areas 1 and 2 to the established single-family suburban residential neighborhoods to the south and east; Area; 4, redevelopment of the Lakeview golf club area, along Shen Lake Drive, was later dropped from further evaluation, but is recognized in this 2024 UDA Plan; and Area 5, the intersection of US 33 and Cross Keys Road, including Rockingham Park at the Crossroads and undeveloped areas west and south of the intersection. The five areas are referred to as neighborhood focus areas.

**The five neighborhood focus areas within the UDA boundary are:**

**Stone Port**: defined by the intersection of Port Republic Road and Stone Spring Road, the land generally west to the City line, and north of Peach Grove Avenue.

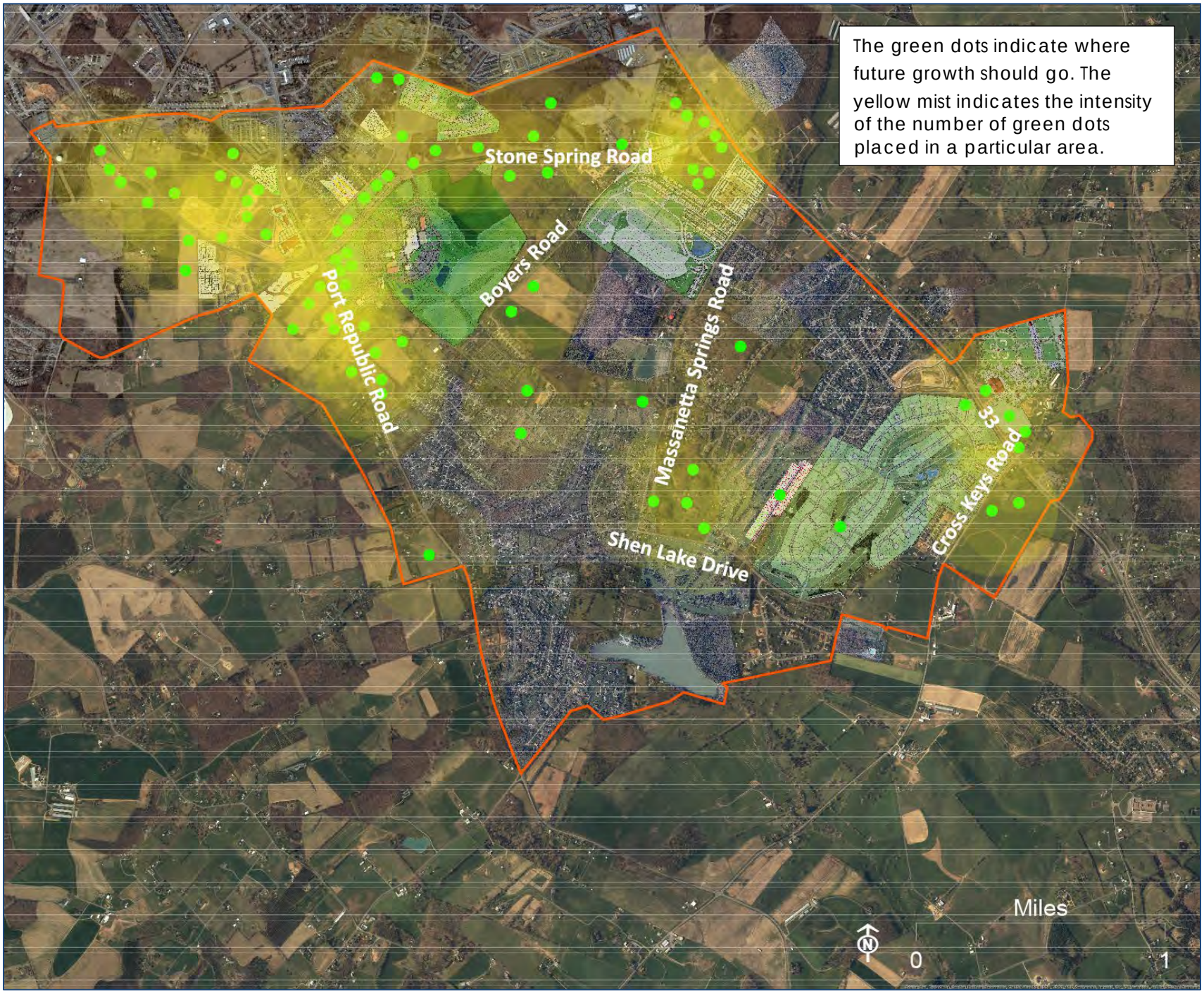
**Stone Ridge**: defined by the intersection of Stone Spring Road and US 33, including Preston Lake, the area east and west of Stone Spring Road, and north of Reservoir Road.

**Boyers Crossing:** defined by the area west and east of Boyers Road from the south side of Port Republic Road to Stone Spring Road.

**Massanetta Springs:** defined by the area west and east of Massanetta Springs Road from Port Republic Road to north of US 33.

**Crossroads**: defined by the intersection of US 33 and Cross Keys Road, from south of Shen Lake Drive to north of US 33.

The next exercise established the design and streetscape principles that would be supported within the focus areas. The overwhelming feedback from the Committee focused on creating a consistent, walkable sidewalk experience with street trees and lighting with greater mixed-use density on compact street blocks (with the buildings closer to the street frontage); crosswalks; streets that are safe for pedestrians and bicyclists; places that bring people together (such as parks and plazas); and establishing neighborhood identity that is the culmination of these ideas. Finding locations for a new fire department and school also were noted as important. Since the 2020 UDA Plan was adopted, the Hose Company #4 station on Port Republic Road, has been replaced with a larger facility.


The green dots indicate where future growth should go. The yellow mist indicates the intensity of the number of green dots placed in a particular area.
Stone Spring Road
Boyers Road
Port Republic Road
Massanetta Springs Road
Shen Lake Drive
Cross keys Road
Miles
0
1

## 1. THE 10 GUIDING PRINCIPLES OF WHAT MAKES A NEIGHBORHOOD

The 2020 UDA Plan's Advisory Committee's first critical task was to create principles that provide a roadmap for the next 20 years, and the second, was to create a phasing strategy that introduces these principles when the economics and market demand are sustainable. These guiding principles are based on the evaluation of greenfield development examples in similar contexts in which undeveloped or underutilized land was developed into thriving neighborhoods. In these examples, a critically important element to establish during the first phases was the creation of a discernible center that would attract future investment in the near-term. Analysis of best-practice examples also indicated the importance of allowing for flexibility in terms of land use, and focusing on form first, such as placing buildings closer to the street early in the process and having a strategy to encapsulate parking in the mid- to long-term from a land-value perspective.

## 2. FORM-BASED TRANSECT TO GUIDE FUTURE GROWTH (AND PROTECT RURAL AND ESTABLISHED SUBURBAN AREAS)

The transect is a valuable tool that establishes criteria for form and land use for specific areas. By using this tool, the UDA Plan can promote Stone Port and Stone Ridge as more dense, while Boyers Crossing and Crossroads can function as transition areas to the established Massanetta Springs suburban area. In addition, the transect can help maintain the character of the rural areas outside the UDA, as well as the established suburban areas in the UDA. See Stone Spring UDA Transect Map on page 27.

# WHAT DESIGN AND STREETSCAPE ELEMENTS ARE MOST IMPORTANT TO YOU?

BASED ON THE NUMBER VOTES (AS INDICATED ON THE LEFT SIDE OF EACH PHOTO)

**26** SIDEWALKS WITH A CLEAR PEDESTRIAN PATH, STREET TREES AND LIGHTING

**21** BUILDINGS CLOSER TO THE STREET / PARKING BEHIND THE BUILDING

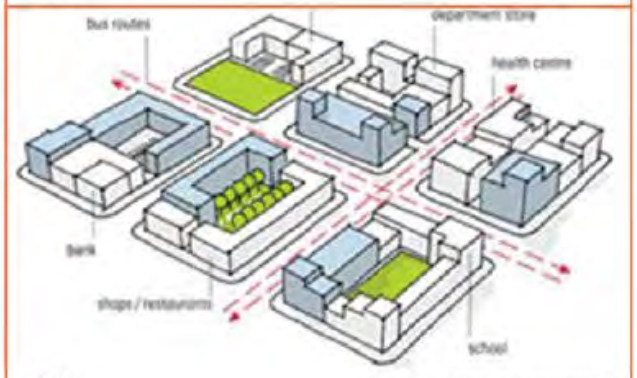
**20** NEIGHBORHOOD CENTERS

**23** GREATER DENSITY / MIXED-USE DEVELOPMENT

**21** BICYCLE LANES

**19** NEIGHBORHOOD IDENTITY

**23** CROSSWALKS




**20** COMPACT STREET BLOCKS

OTHER DESIGN ELEMENTS THAT RANKED HIGH:

- TRAFFIC CALMING
- GROCERY STORE
- LIBRARY (CIVIC BUILDING)
- SCHOOL

## 3. NEIGHBORHOODS CONNECTED BY PEDESTRIAN AND BICYCLE PATHWAYS

The UDA Plan builds upon the 2016 Harrisonburg-Rockingham MPO Bicycle and Pedestrian Plan by connecting Stone Port, Stone Ridge, and Boyers Crossing, and its proposed parks with existing and new pedestrian bicycle paths and trails. The UDA Plan envisions a Stone Spring Pedestrian and Bicycle Trail, based on the concept of Huckleberry Trail in Blacksburg and Christiansburg, that connects Stone Ridge with Stone Port, and is gradually built out as development occurs in these areas.

The UDA Plan expands on the bicycle study network for Boyers Road with a proposed multi-use path that extends into Stone Ridge. Envisioning the big picture, Stone Spring Road, Boyers Road, and the existing Port Republic Road facilities would create a complete and continuous circuit through the heart of the UDA, as shown on page 36.

## 4. DESIGN AND STREETSCAPE GUIDELINES

Design and streetscape guidance is articulated for lot size, building massing, modulation, facades, entries, and streetscape elements along the public right-of-way to enhance the pedestrian experience.

## 5. NEIGHBORHOOD CONCEPTS

Neighborhood concepts are provided for Stone Port, Stone Ridge, Boyers Crossing, Massanetta Springs, and Crossroads, suggesting urban design strategies, park locations, development concepts, and phasing strategies. There are many scenarios in which development can proceed in these areas, and what is shown in this section is just one approach that is based on the neighborhood principles and design guidelines articulated in the previous sections of the UDA Plan.

The neighborhood concepts also evaluate how to plan for transitioning from surface to structured or encapsulated parking. A development model that is based only on surface parking is not sustainable in the future.

For example, a two-bedroom apartment (approximately +/- 1,200 SF) requires 1.5 parking stalls. The average square footage to support one surface parking stall (the stall, percentage of the drive aisle, walkway, site topography and landscaping is 350 square feet per stall.

For every 2-bedroom (1,200 SF) apartment, about 525 SF of surface area is required. To achieve the type of density necessary to sustain commercial and retail use, the amount of land area to accommodate surface parking is significant. Reducing the footprint used by parking in the future, by gradually transitioning to encapsulated parking, is recommended for consideration, in order to achieve the necessary density to support the types of uses desired.


STONE SPRING UDA PLAN DOCUMENT ORGANIZATION

# 1. THE TEN GUIDING PRINCIPLES OF WHAT MAKES A NEIGHBORHOOD

## 10 PRINCIPLES

*Many parts make a neighborhood. A neighborhood has stores and shops that satisfy everyday needs within an easy walk with safe and friendly streets on which people feel they "belong." Residential streets feel public, and more like open space than traffic ways. Streets are a pleasant part of the neighborhood. A great neighborhood has many choices to move on foot, by bicycle, transit, and auto. A neighborhood has places for people to meet, talk and be neighborly with gathering places that include parks, plazas, sidewalks, and shops. Lastly, a great neighborhood has its own character, shaped by its physical setting, streets, buildings, open spaces, history, and the people who live in them.*


1. A discernible center
2. Connected sidewalks with a clear pedestrian path, street trees and lighting
3. Buildings placed close to the street to create a sense of place
4. Parking placed behind buildings and away from street frontages
5. Complete Streets - a balance between cars, pedestrians, and bicyclists


6. Compact street blocks that encourage walking
7. Most of the dwellings are within a five-minute (1/4 mile) walk to the center
8. Greater density, with a variety of dwelling types and commercial activity
9. Neighborhood Identity
10. Prominent civic and public buildings

## 1 DISCERNIBLE CENTER

Every neighborhood should have a discernible center, which can accommodate programmed or spontaneous events, or simply be a place people relax or meet friends. The center is often a hardscaped plaza, green, or a park space; it could even be a busy street corner. The center is supported and framed by mixed-use development with uses directly facing the center, with a significant amount of residential units within a quarter-mile radius, which equates to a five-minute walk to the center.

The first phase of the Daleville and One Loudoun town centers established a multi-functional plaza space that accommodates festivals, farmers markets, and other events that help create a destination and attract future development.

### LOCAL CASE STUDY EXAMPLES

One Loudoun Town Center, Loudoun County




Daleville Town Center, Botetourt County,



## 2 CONNECTED STREETS CONDUCIVE TO PEDESTRIANS AND CYCLISTS

Streets within the neighborhood form a connected network, which disperses traffic by providing a variety of bicycle, pedestrian, and vehicular routes to any destination. An interconnected street grid network disperses traffic & eases walking. Public roadways will conform to VDOT's Road Design Manual.

KEY

1. Consistent and unencumbered sidewalks between street blocks encourages walking.

2. Striped bicycle lanes are continuous between street blocks

3. A high-quality pedestrian network and public realm makes walking pleasurable with sidewalk bulb-outs at street intersections and enhanced crosswalks that are highly visible.

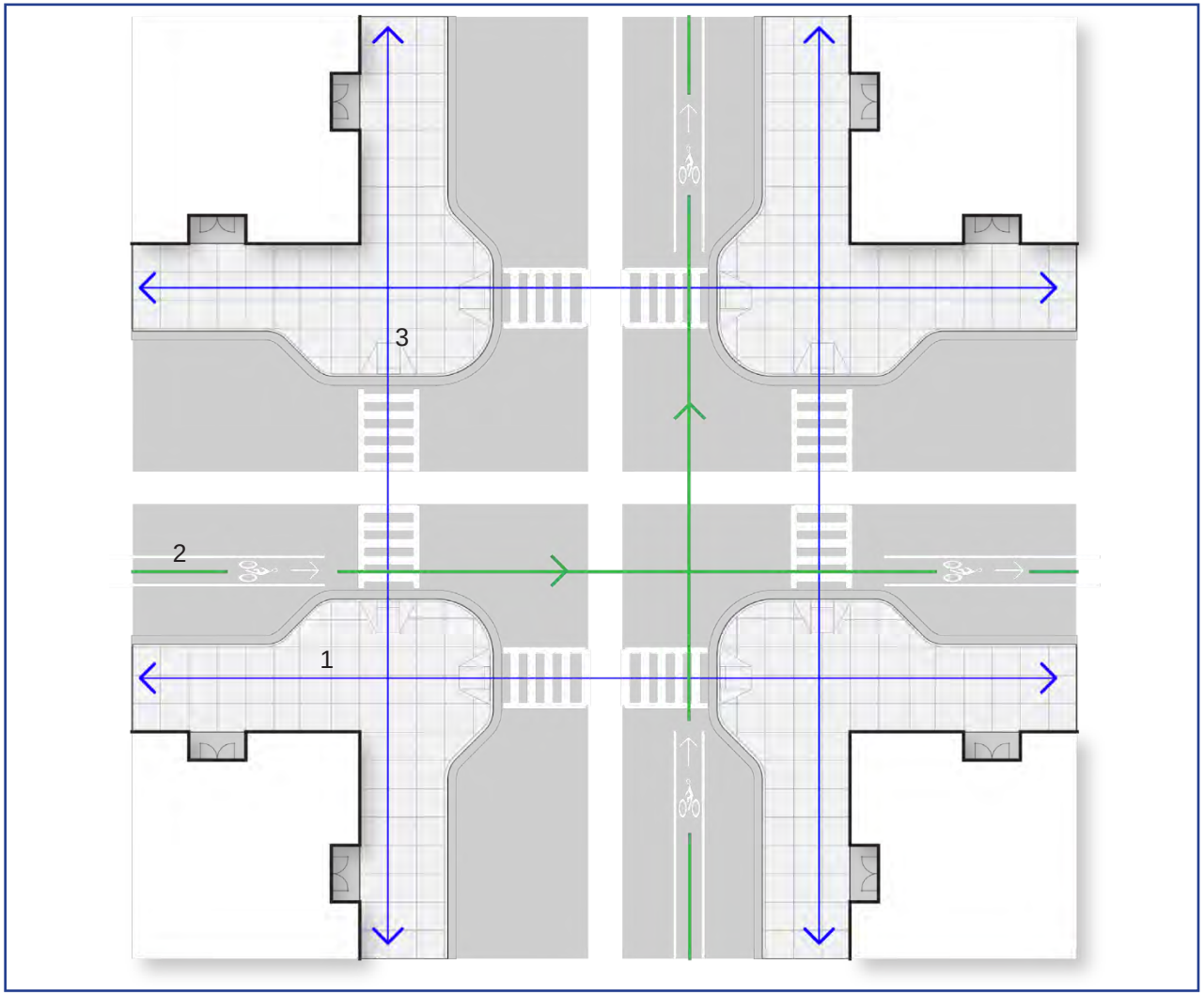



DIAGRAM: STREET GRID CONNECTIVITY

## 3 BUILDINGS PLACED CLOSE TO THE STREET TO CREATE A SENSE OF PLACE

Buildings in the mixed-use nodes are placed close to the street, creating a well-defined outdoor space.

## 4 PARKING PLACED BEHIND BUILDINGS AND AWAY FROM STREET FRONTAGES


DIAGRAM: PLACEMENT OF DEVELOPMENT ON STREET BLOCK

Parking lots and garage doors rarely front the street. Parking is relegated to the rear of buildings, usually accessed by alleys.

# 5 COMPLETE STREETS

Complete streets have no singular design prescription. Each one is unique and responds to its community and topographic context; however, complete streets are designed to balance drivers, pedestrians, and bicyclists. A complete street may include sidewalks, bike lanes (or wide, paved shoulders), special bus lanes, comfortable and accessible public transportation stops, frequent and safe crossing opportunities, median islands, handicap-accessible pedestrian signals, curb extensions, narrower travel lanes, roundabouts, and more. The placement of buildings, street trees, and other features shall not inhibit intersection sight distances. All elements of complete streets need to comply with VDOT's Road Design Manual.

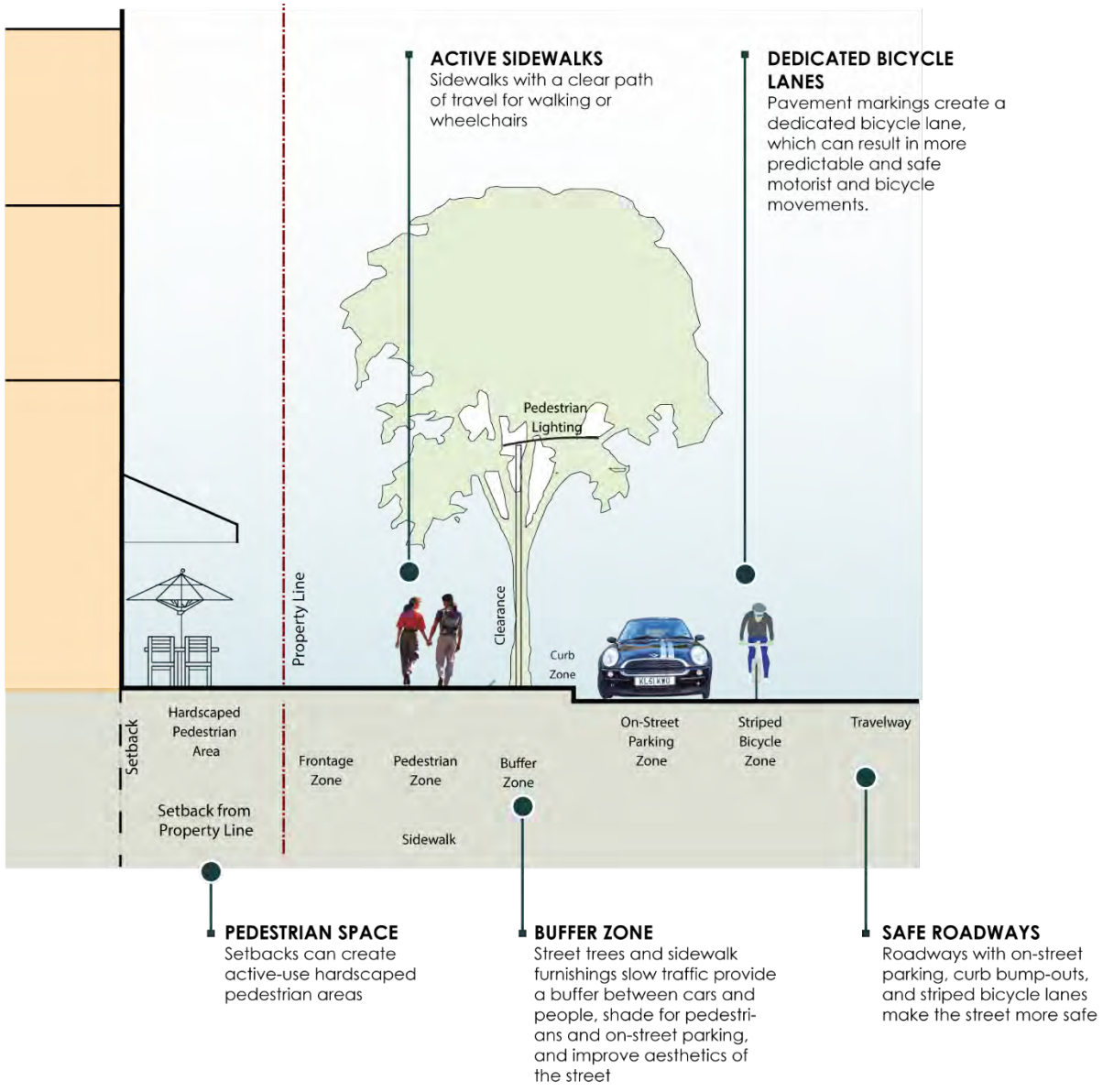
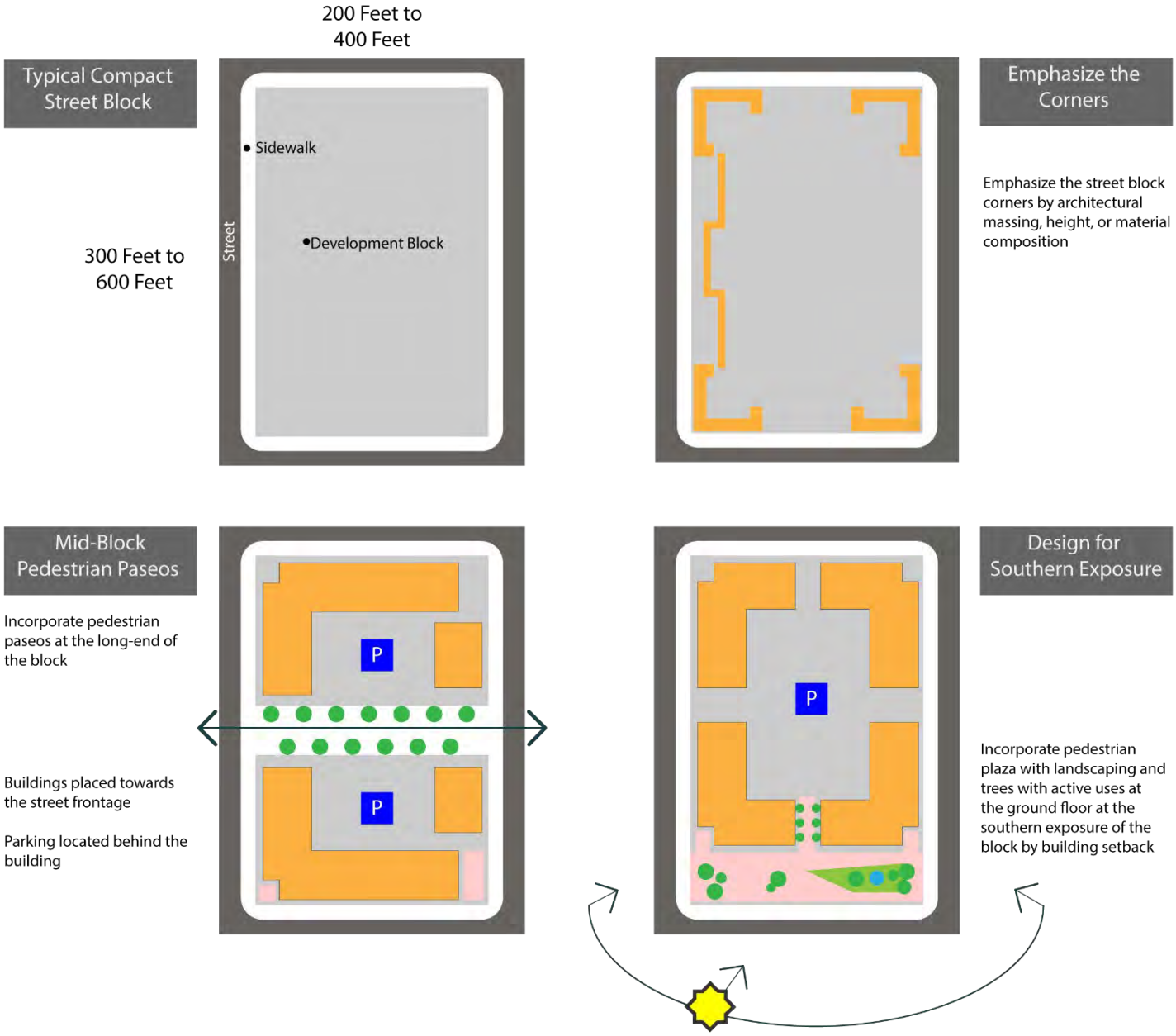



DIAGRAM: COMPLETE STREETS SECTION

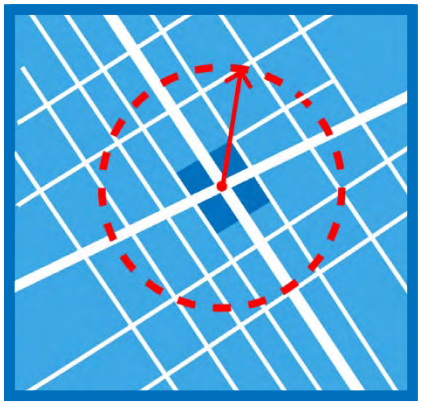
# 6 COMPACT STREET BLOCKS THAT ENCOURAGE WALKING

Compact street blocks that are 200 to 400 feet wide and up to 600 feet deep provide a comfortable neighborhood scale that facilitates a fine-grain development pattern and walking experience. For blocks that exceed the maximum recommended length of 600 feet, a mid-block pedestrian path is recommended to allow for passage.

Orienting plazas to a southern exposure is recommended to maximize year-round utility.



## 7 ¼-MILE-WALK TO THE CENTER



Most of the dwellings are within a five-minute (1/4-mile) walk to the center. The center can be a park, plaza, event center, or street.

## 8 COMPACT MIXED-USE DEVELOPMENT

Greater density, with a variety of dwelling types and commercial activity, provides synergy among uses and creates a critical mass to sustain retail and commercial uses.

## 9 NEIGHBORHOOD IDENTITY


Neighborhood identity provides the brand and image of the area, and a basis for a marketing strategy to promote businesses, events, and future development opportunities.

## 1 PROMINENT CIVIC AND PUBLIC BUILDINGS

Certain prominent sites at the termination of street vistas or in the neighborhood center or park, should be reserved for civic buildings (library, post office, etc.). These provide sites for community meetings, education, and religious or cultural activities.

### DIAGRAM: PHASING THE GUIDING PRINCIPLES (PAGE 23)

The phasing diagram illustrated on Page 23 describes how the guiding principles that help create a great neighborhood can be phased over time. Getting the placement of buildings right and establishing a center of the neighborhood is critical in the earlier phases of a neighborhood. As more development is planned, addressing how parking is treated becomes a critical component.

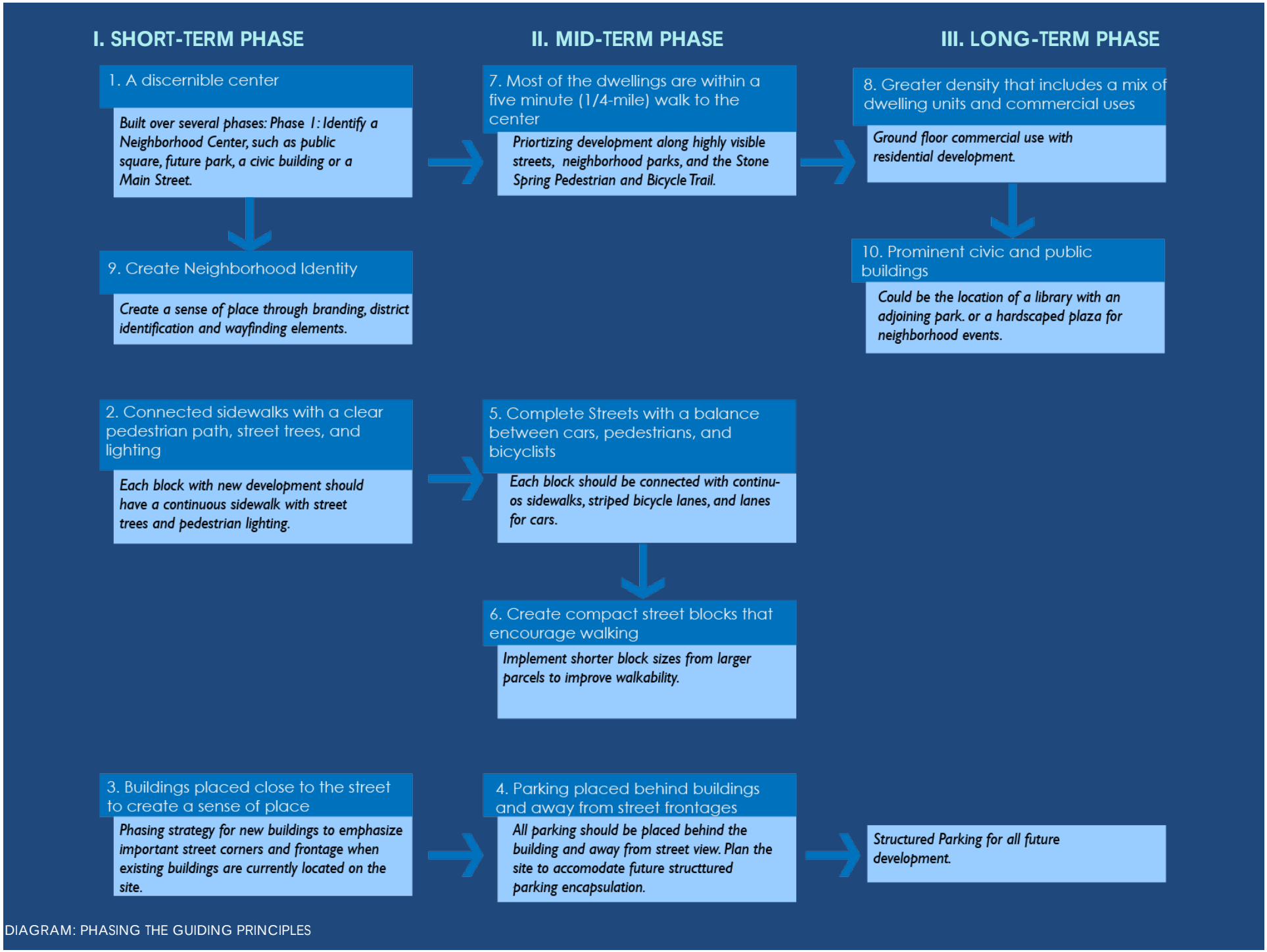
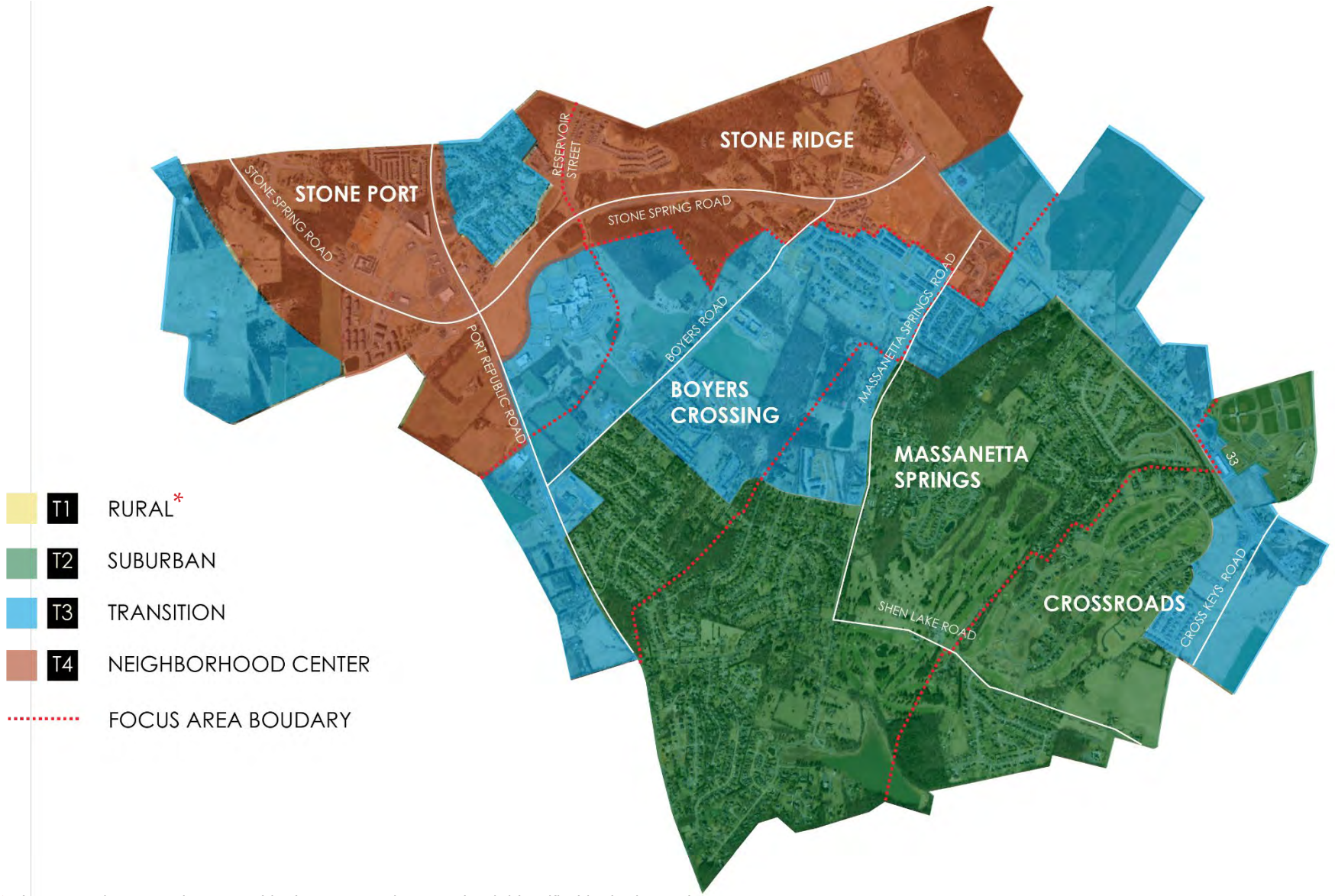



DIAGRAM: PHASING THE GUIDING PRINCIPLES

# 2. FORM-BASED TRANSECT TO GUIDE FUTURE GROWTH (AND PROTECT RURAL AND ESTABLISHED SUBURBAN AREAS)

# STONE SPRING UDA TRANSECT MAP




* The T1 Rural Transect is not used in the Stone Spring UDA but is identified in the legend to maintain the standard format and to have the transect applicable to other parts of the County where there are rural areas.

## Stone Spring Transects – A Means of Preservation and Transformation

The Stone Spring Transect (Transect) adapts the 10 guiding principles of "What Makes a Neighborhood" into criteria for form, height, setbacks, streetscape elements, and neighborhood character, specific to the Stone Spring UDA.

The Transect is a tool that guides the placement and form of buildings and landscape, allocates uses and densities, and details civic spaces, including street character and its elements, such as street trees, lighting, and finishes. The Transect is also a geographic cross-section used to reveal a sequence of environments within the Stone Spring UDA. This cross-section is used to identify the level and intensity of neighborhood character within a continuum that ranges from rural to urban. The Transect is customized to the vision of the Stone Spring UDA, as articulated by the UDA Advisory Committee and stakeholders, by preserving the physical character of the rural and established suburban areas, while promoting a more compact and mixed-use character elsewhere in the UDA.

The segmentation of the Transect continuum is accomplished by creating four different Transect Zones: the Rural T1, which is not located in the UDA.; the Suburban T2 comprised of residences that are predominately single-family neighborhoods and future mixed-use nodes; the Transition T3, where development steps up in height and intensity and a mix of uses; and the Neighborhood Center T4 that is planned for the most compact mixed-use development.

Each Transect Zone is based on how development relates to the context and topography of the surrounding community, especially the relationships between buildings and the street, pedestrians and vehicles, and public and private spaces. For example, incorporating a variety of residential and commercial spaces, such as multi-story buildings and public squares, into a single neighborhood is appropriate in Neighborhood Center T4, Transition T3, and mixed-use nodes of the Suburban T2.

In the Transition T3 Zone, residential density would generally and gradually decrease, starting with apartments to townhouses to fully detached houses. Both Transition T3 and Neighborhood Center T4 zones would have park spaces with residential development located within a quarter-mile walking distance. Efforts to implement the principles of the Transect Zones will involve evaluation of and amendments to the County's zoning ordinance.

Transition T3 Example

Transition T4 Example

## TABLE: TRANSECT ZONE DESCRIPTIONS

This table provides descriptions of the character of each Transect Zone within the Stone Spring UDA which includes general character, building placement, height, setbacks, and types of civic space.

| | | | |
|---|---|---|---|
|  | T-1 RURAL (R)<br>T-1 Rural Zone consists of open or cultivated and sparsely settled lands. This includes woodlands and agricultural land.<br><br>Not used in the Stone Spring UDA | General Character: | Primarily agricultural with woodland & wetland and scattered farm buildings and residences. Typical structures are detached single family dwellings and agricultural buildings. A small accessory building may be appropriate within the back yard of each house, which may be used as a rental unit, an in-law suite, or place to work (e.g. office or craft workshop). |
| | | Building Placement: | Variable setbacks |
| | | Frontage Types: | Common yard, porch, & fence |
| | | Typical Building Height: | Generally, 35 to 45 feet; heights may be exceeded by Special Use Permit. |
| | | Type of Civic Space: | Parks, playgrounds, and greenways |
|  | T-2 SUBURBAN (S)<br>T-2 Suburban Zone consists of low-density residential areas. Planting is naturalistic and setbacks are relatively deep. Blocks are large and the roads are irregular to accommodate natural conditions. This zone may include small mixed-use nodes. | General Character: | Lawns, and landscaped yards surrounding detached single-family residences; a lesser amount of attached housing, such as duplexes and townhouses; mixed-use nodes of residential, neighborhood commercial, telecommuters' services, and civic activity. A small accessory building may be appropriate within the backyard of each house, which may be used as a rental unit, an in-law suite, or place to work (e.g. office or craft workshop). |
| | | Building Placement: | Large and variable setbacks |
| | | Frontage Types: | Common yard, porch, & fence |
| | | Typical Building Height: | Generally, 35 to 45 feet, with consideration for surrounding heights and utilizing areas of lower topography for tallest structures to help maintain a horizontal plain lower than in the T3; heights may be exceeded by Special Use Permit |
| | | Type of Civic Space: | Parks, playgrounds, and greenways |
|  | T-3 TRANSITION (T)<br>T-3 Transition Zone consists of a primarily residential fabric but with some commercial emphasis and mixed-use nodes along certain roads. Setbacks and landscaping are consistent. Streets have curbs and sidewalks with medium sized blocks. | General Character: | Mix of detached single-family houses, accessory dwellings, duplexes, townhouses, and apartments, with mixed-use nodes of residential, commercial, and civic activity located along certain roads. Bicycle and pedestrian accommodations. Smaller lots and lesser setbacks than in T2. |
| | | Building Placement: | Shallow to medium front and side yard setbacks |
| | | Frontage Types: | Porch & fence, terrace, forecourt, stoop, storefront |
| | | Typical Building Height: | Generally, 45 to 75 feet, with consideration for surrounding heights and utilizing areas of lower topography for tallest structures to help maintain a horizontal plain lower than in the T4; heights may be exceeded by Special Use Permit |
| | | Type of Civic Space: | Libraries, parks, plazas, multi-purpose trails, or shared-use paths along certain roads. |
|  | T-4 NEIGHBORHOOD CENTER (NC)<br>T-4 Neighborhood Center Zone consists of higher density mixed-use buildings that accommodate residential (such as townhouses and apartments) and commercial (such as offices and retail). The T4 has a compact network (shorter blocks than T3) of neighborhood streets, with consistent sidewalks, street-tree plantings, and buildings placed close to the sidewalks and streets. Development is organized around neighborhood parks within a 1/4-mile walk. | General Character: | Commercial mixed with townhouses, apartments, offices, and civic buildings; predominantly attached buildings; street trees; substantial pedestrian and bicyclist street activity; parking placed behind buildings or in structured parking facilities. |
| | | Building Placement: | Setbacks up to 10' or none, depending on the street type. Buildings oriented to the street, defining a street wall. |
| | | Frontage Types: | Porch & fence, terrace, forecourt, stoop, storefront, gallery, arcade |
| | | Typical Building Height: | Generally, 45 to 75 feet; heights may be exceeded by Special Use Permit; Planned Medical Research zoning allows 180' for commercial buildings. |
| | | Type of Civic Space: | Libraries, parks, plazas and squares, median landscaping, and pedestrian and bicycle accommodations that connect to existing and future pedestrian and bicycle facilities and to other transect zones. |

## PRIVATE FRONTAGES DESCRIPTIONS DIAGRAM

The Private Frontages Diagram describes various common frontages that are appropriate for Transect Zones, with a brief description, section and plan view, as indicated in Table SPECIFIC FUNCTION AND USE.

**A. Common Yard:** A planted frontage wherein the façade is set back substantially from the property line. The front yard is visually continuous with adjacent yards, supporting a common landscape. The deep setback provides a buffer from the higher speed thoroughfares.

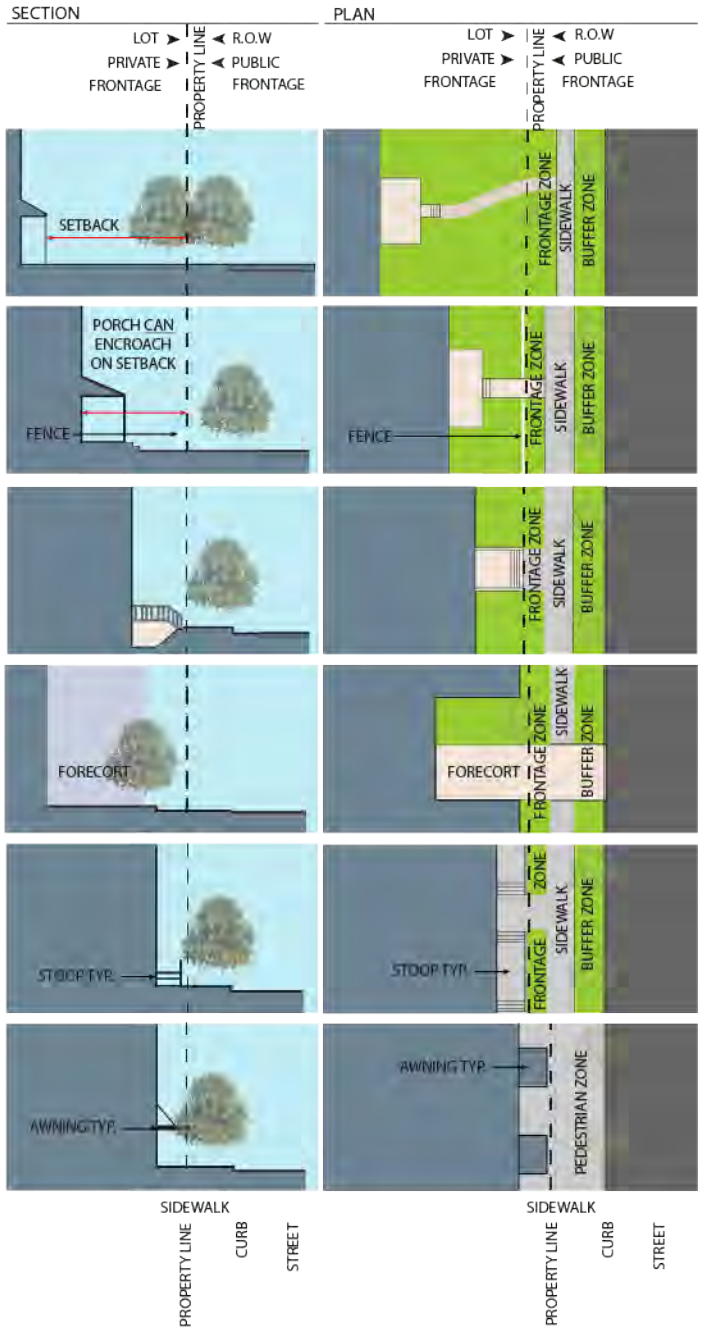
**B. Porch & Fence:** A planted frontage wherein the façade is set back from the property line with an attached porch permitted to encroach into the setback.

**E. Terrace or Lightwell:** A planted frontage wherein the façade is set back from the property line by an elevated terrace or a sunken lightwell which may encroach into the setback. This type buffers residential use from urban sidewalks and removes the private yard from public encroachment. Terraces are suitable for conversion to outdoor cafes.

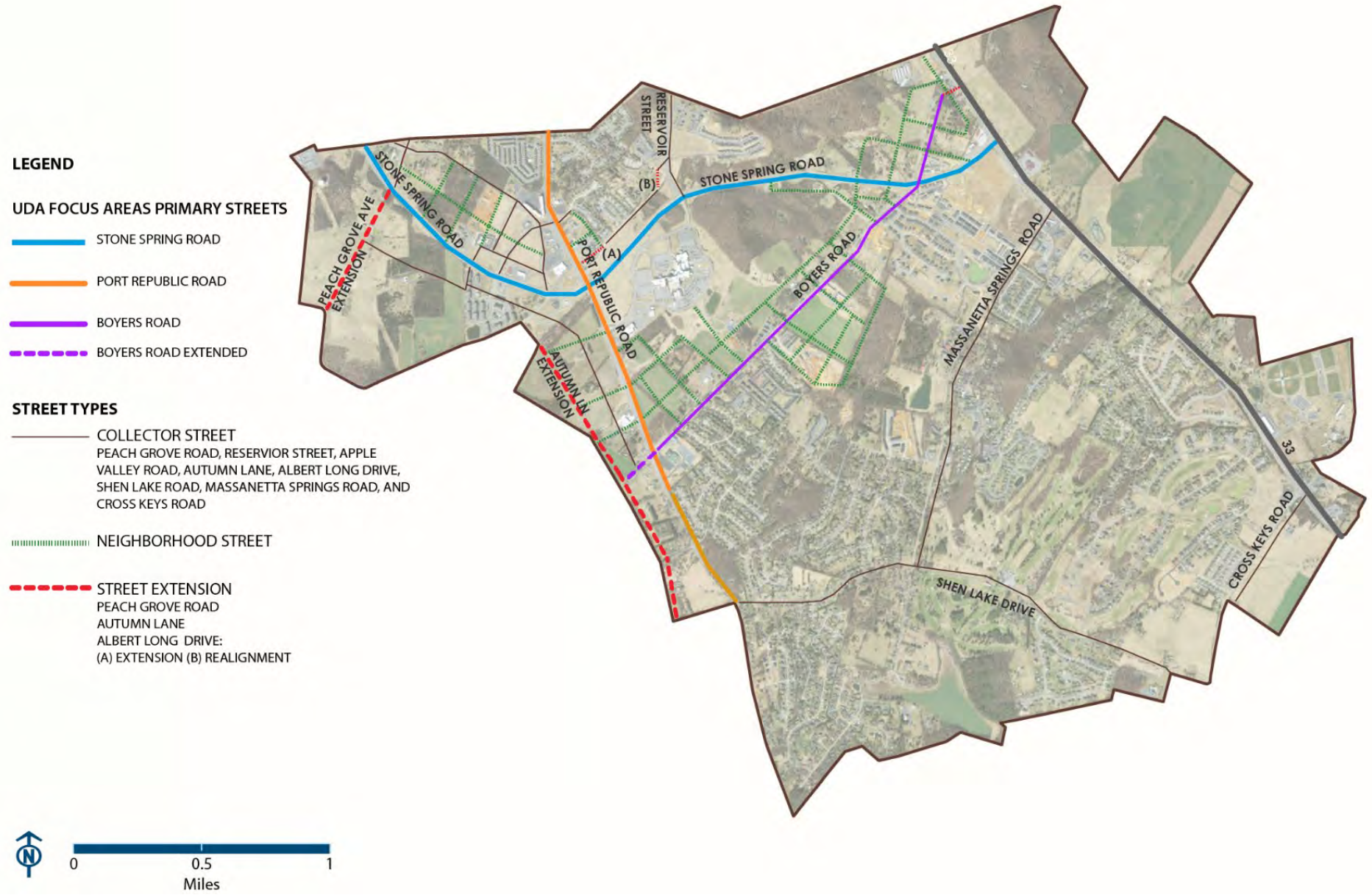
**D. Forecourt:** A frontage wherein a portion of the façade is close to the property line and the central portion is set back. The forecourt created is suitable for vehicular drop-offs and outdoor cafes. This type should be allocated in conjunction with other frontage types. Large trees within the forecourts may overhang the sidewalk.

**E. Stoop:** A frontage wherein the façade is aligned close to the property line with the first story elevated from the sidewalk sufficiently to secure privacy for the windows. The entrance is usually an exterior stair and landing. This type is recommended for ground-floor residential use.

**F. Storefront:** A frontage wherein the façade is aligned close to the property line with the building entrance at sidewalk grade. This type is conventional for retail use and frontage. It has substantial glazing on the sidewalk level and an awning that should overlap the sidewalk and may encroach into the setback.

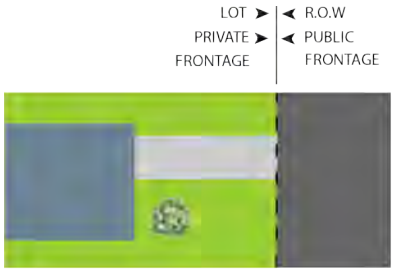


# STONE SPRING UDA STREET HIERARCHY PLAN



## STREET HIERARCHY PLAN

The Street Hierarchy Plan provides a template to improve connectivity between and within the neighborhoods for safe movement of pedestrians, cyclists, and vehicles with specific street descriptions. Each street type indicated on the Street Hierarchy Plan are described below, with a conceptual plan view.




Suburban Street: Allows for circulation within the single-family neighborhoods of Stone spring UDA. This frontage includes deep setbacks that vary between 40 and 60 feet, and private landscaping consists of multiple species arrayed in naturalistic clusters. The rights-of-way are typically 22 feet wide that allows for two lanes of traffic. There are no curb, gutter or sidewalk areas defined. The driveway connects the street with the house. The single-family neighborhoods of the Stone Spring UDA are largely defined and no further changes are envisioned.

Circulator Street: Allows for the circulation between the focus areas. Circulator Streets include Peach Groove Avenue and its proposed extension, Autumn Lane Extension and Reservoir Street. This frontage has raised curbs and a paved sidewalk. The landscaping consists of street trees of alternating species aligned in a regularly spaced configuration. Since Circulator Streets connect suburban areas with the more dense areas of Stone Port and Stone Ridge neighborhoods, building setbacks are up to 20 feet.

Neighborhood Street: Are new streets to allow for the circulation within the Stone Port and Stone Ridge neighborhoods. This frontage has raised curbs and wide sidewalks separated from the vehicular lanes by a continuous variety of tree species planted in wells, aligned and spaced in a regularly spaced configuration. Building setbacks can vary between 0 to 10 feet. Some neighborhood streets could have parking on both sides.

Primary Street: Allows for circulation between the suburban areas and the more dense focus areas of Stone Port and Stone Ridge. The frontage along Boyers Road is proposed to have multi-use pathway on one side, separated from the vehicular lanes which will require various easements from both sides of the street due the varying right-of-way. The existing building setbacks are up to 50-feet, with 20-feet proposed for new development to ensure more pedestrian friendly frontage. The landscaping consists of a various plant species and are aligned in a regular spacing.

[Continued on next page]

## STREET HIERARCHY PLAN(CONTINUED)

Stone Spring Road: Is a major part of the circulation network, providing the main addressing for both Stone Port and Stone Ridge neighborhoods. Stone Spring Road is defined by 4 lanes of travel and a median that varies in width depending on turning moments at intersections. The street should be improved to accommodate pedestrians and cyclists as new development occurs along its frontage with minimized curb cuts, wide sidewalks, street trees and striped bicycle lanes. The building setback should be 5 to 20 feet, depending on site topography constraints and accommodating a 14-foot wide sidewalk. Development should reinforce the important intersections at Port Republic Road, Reservoir Street and U.S Route 33.

Port Republic Road: North-south connector that starts as a primarily commercial road with 4 lanes of traffic and a median that accommodates turning movements at intersections. On the west side of the road is multi-use path with a 5-foot landscape strip and curb adjacent to vehicular traffic. The character of the road changes just south of Boyers Road to accommodate single-family residential neighborhoods with a reduction in right-of-way width and the number of drive lanes. Future development should maintain the multi-use path with building setbacks up to 10-feet from the edge of the path to also accommodate a consistent placement and species of street trees.

U.S. Route 33 (west side only): Future development along the westside of the 100-foot right-of-way should support a 12-foot multi-use path with a 5-foot landscape strip and curb, adjacent to a frontage access road. Building setback from the edge of the multi-use path should be up to 20 feet to accomodate varying tree species site topography and landscaping.

# 3. NEIGHBORHOODS CONNECTED BY PEDESTRIAN AND BICYCLE PATHWAYS

# Connecting the Neighborhood Focus Areas with Pedestrian and Bicycle Trails

## PEDESTRIAN AND BICYCLE PATHWAYS

The UDA Plan builds upon the 2016 Harrisonburg-Rockingham MPO Bicycle and Pedestrian Plan by connecting Stone Port, Stone Ridge, and Boyers Crossing and proposed parks with existing and new pedestrian and bicycle multi-use paths. The big idea of the UDA Plan is that new neighborhoods can be formed around a park or mixed-use node with residential development located within a quarter-mile walking distance. Multi-use paths connect to adjacent neighborhoods that allow for safe movement of pedestrians and cyclists, as indicated in the connectivity map.

*Huckleberry Trail. Blacksburg Va.*

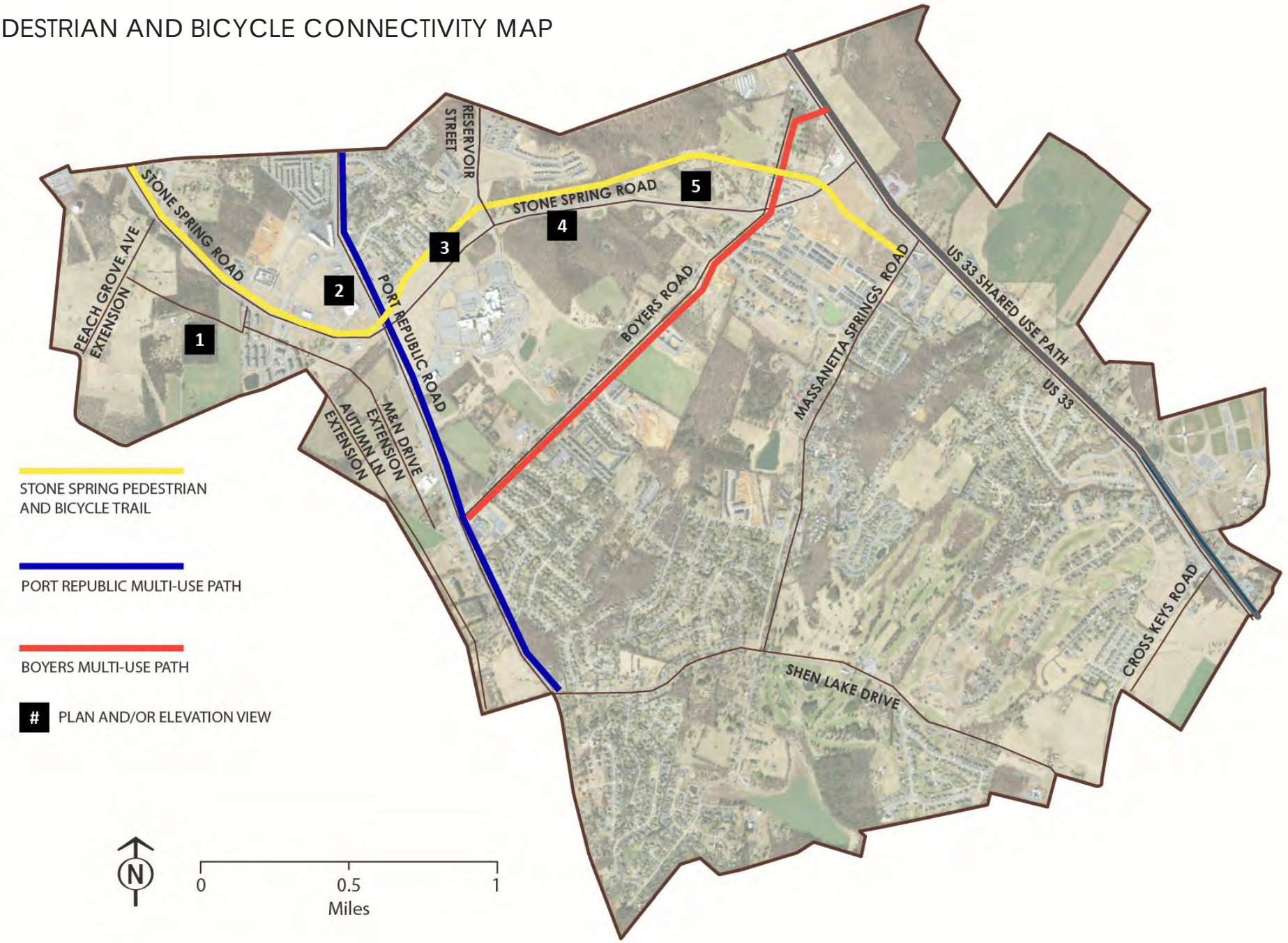
*Huckleberry Trail. Blacksburg Va.*

The UDA Plan envisions a Stone Spring Pedestrian and Bicycle Trail, based on the concept of Huckleberry Trail in Blacksburg and Christiansburg, as well as other examples throughout the Commonwealth, as a pathway that generates private investment and connects the future neighborhoods in Stone Ridge with Stone Port, and is gradually built out as development occurs in these areas. The UDA Plan expands on the MPO's Bicycle and Pedestrian Plan's network for Boyers Road with a proposed shared-use path that connects Boyers Crossing with Stone Ridge. The Port Republic Road shared-use path currently connects Stone Port with Boyers Crossing.

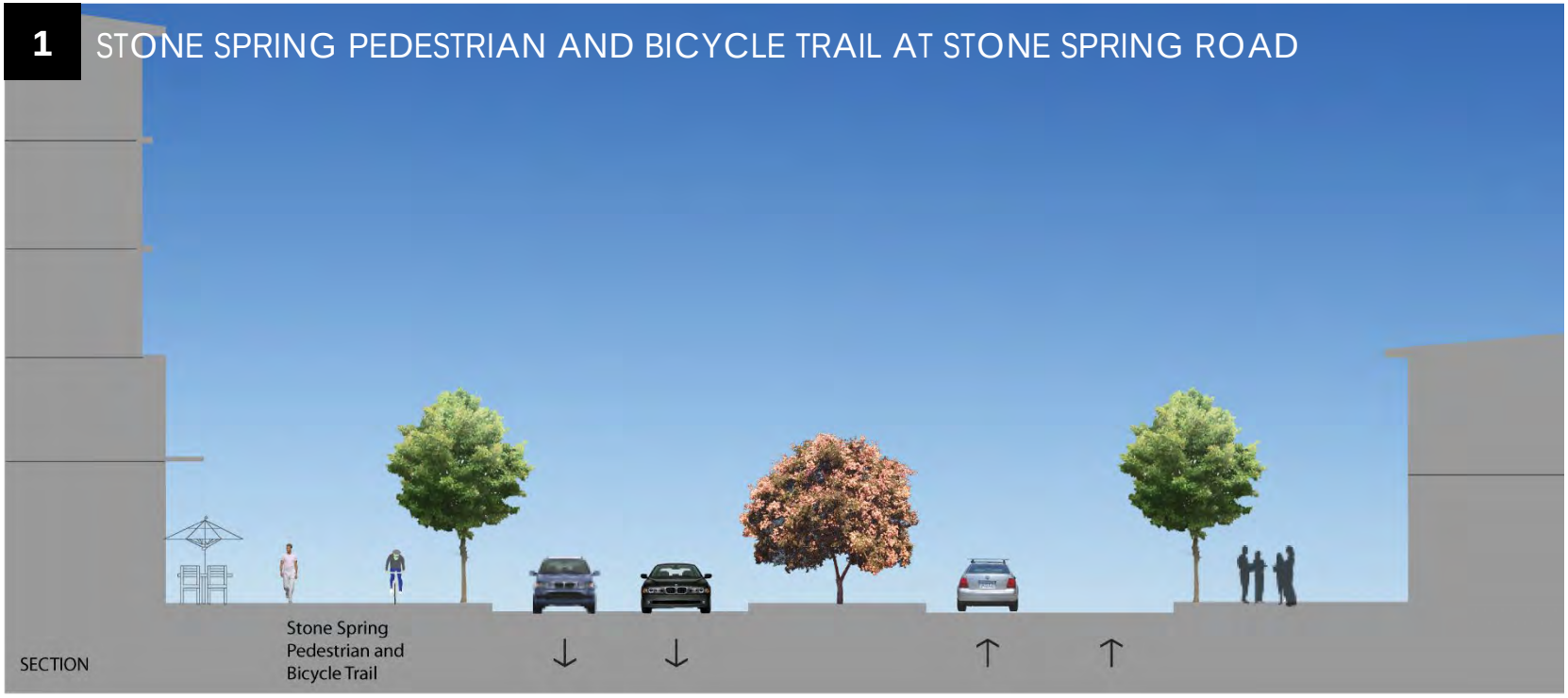
*Cultural Trail. Indianapolis, In. Plan View*

*Cultural Trail. Indianapolis, In. Street View*

# PEDESTRIAN AND BICYCLE CONNECTIVITY MAP



## 1 STONE SPRING PEDESTRIAN AND BICYCLE TRAIL AT STONE SPRING ROAD




# 2 STONE SPRING PEDESTRIAN AND BICYCLE TRAIL AT RESERVOIR


## KEY

1. Realign Albert Long Drive

2. Create new park or a T3 residential density to transition to the established neighborhood

3. Stone Spring Pedestrian and Bicycle Trail

4. Buildings emphasize the intersection

5. Plaza area

6. Townhomes along the park edge

7. Commercial at the ground level

8. Striped bicycle lane

9. Striped crosswalk with pedestrian refuge at median

10. Striped crosswalk

11. Extend sidewalks and striped bicycle lanes to housing beyond

12. Sidewalks on both sides of Stone Spring Road between Port Republic and Spotswood Trail

13. Potential Alternative Stone Spring Pedestrian and Bicycle Trail route. Actual location may affect location of sidewalks.

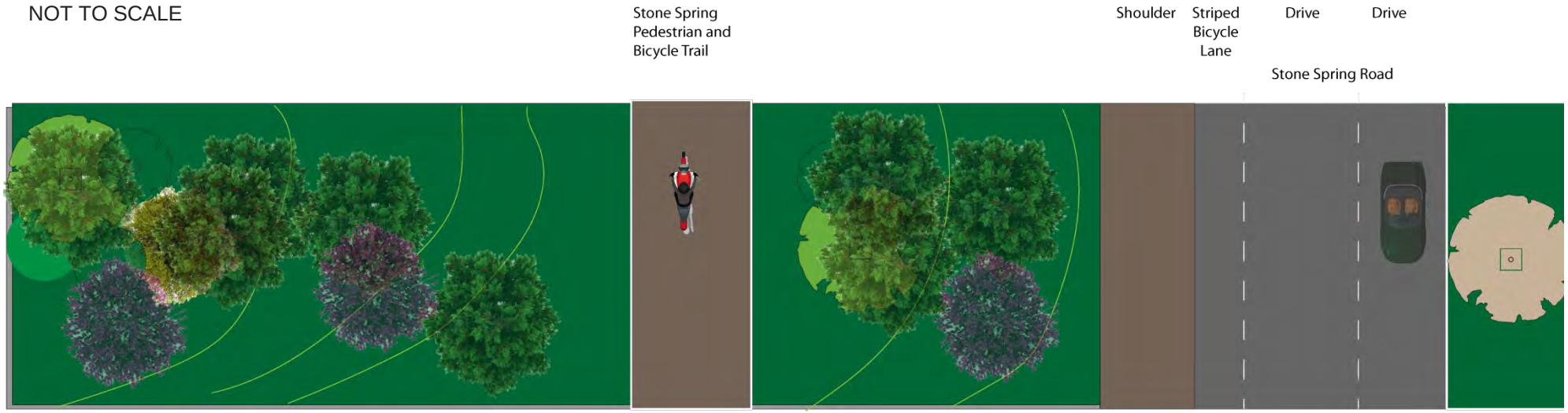
14. Proposed Apartments

Unsignalized crosswalks on VDOT maintained roads need to comply with IIM-TE-384: Pedestrian Crossing Accommodations at Unsignalized Locations.

The Stone Spring Pedestrian and Bicycle Trail is proposed to extend to Reservoir Street, Fieldale Place, and along a realigned Albert Long Drive toward Port Republic Road. See #3, 12, & 13 options.

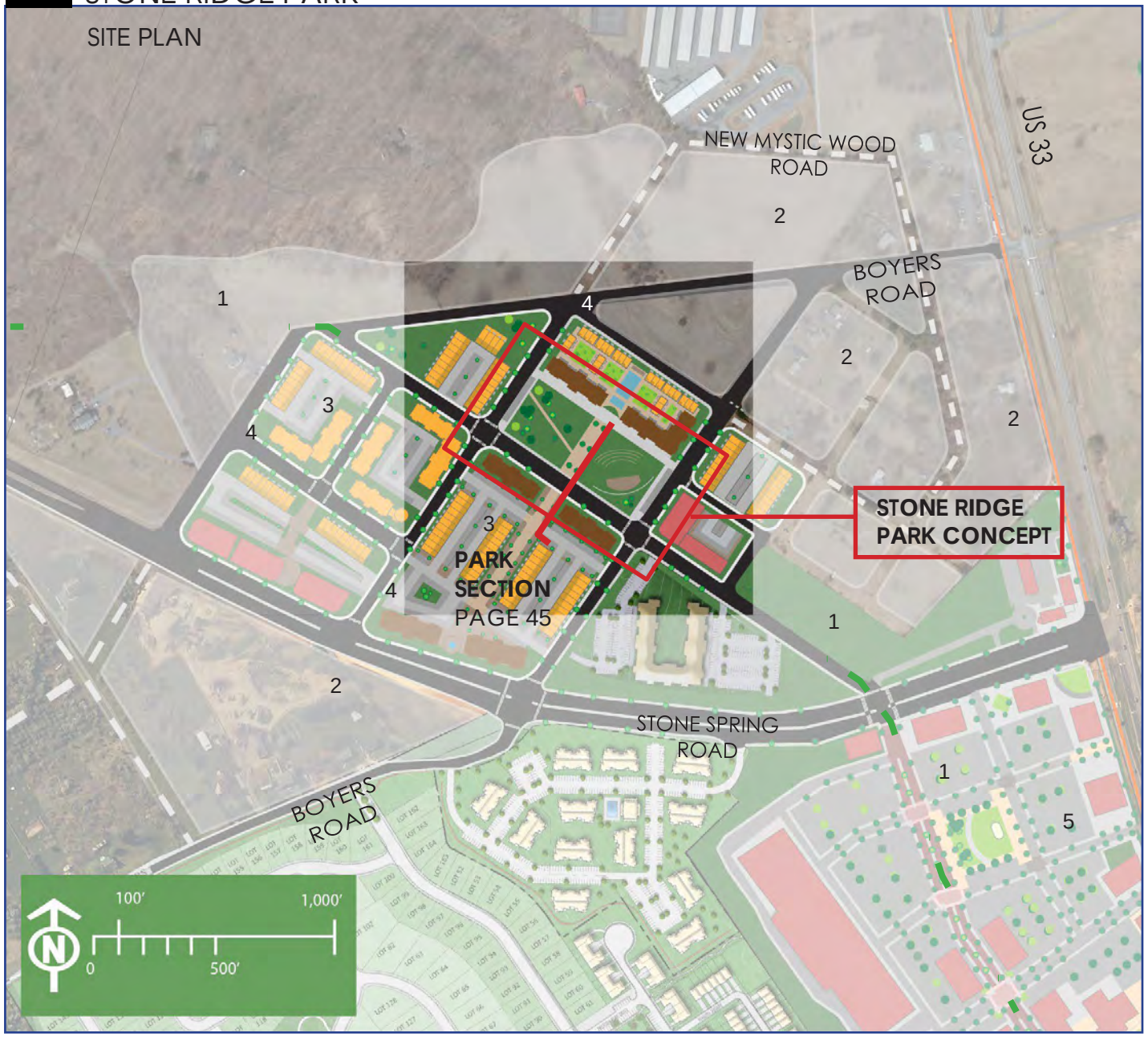
**3 & 4** STONE SPRING PEDESTRIAN AND BICYCLE MULTI-USE TRAIL
OFF-ROAD SECTIONS ALONG STONE SPRING ROAD

NOT TO SCALE



# 5 STONE SPRING PEDESTRIAN AND BICYCLE MULTI-USE TRAIL AT FUTURE STONE RIDGE PARK

SITE PLAN




SEE STONE RIDGE NEIGHBORHOOD CONCEPT, PAGE 82

LEGEND

1. Stone Spring Pedestrian- and Bicycle Trail
2. Future Development block
3. Mixed-Use Development Concept
4. New Road
5. Preston Lake Proposal

## 5 STONE RIDGE PARK SECTION


## PARK EXAMPLES

Hardscaped area with a fountain and elevated stage for neighborhood events

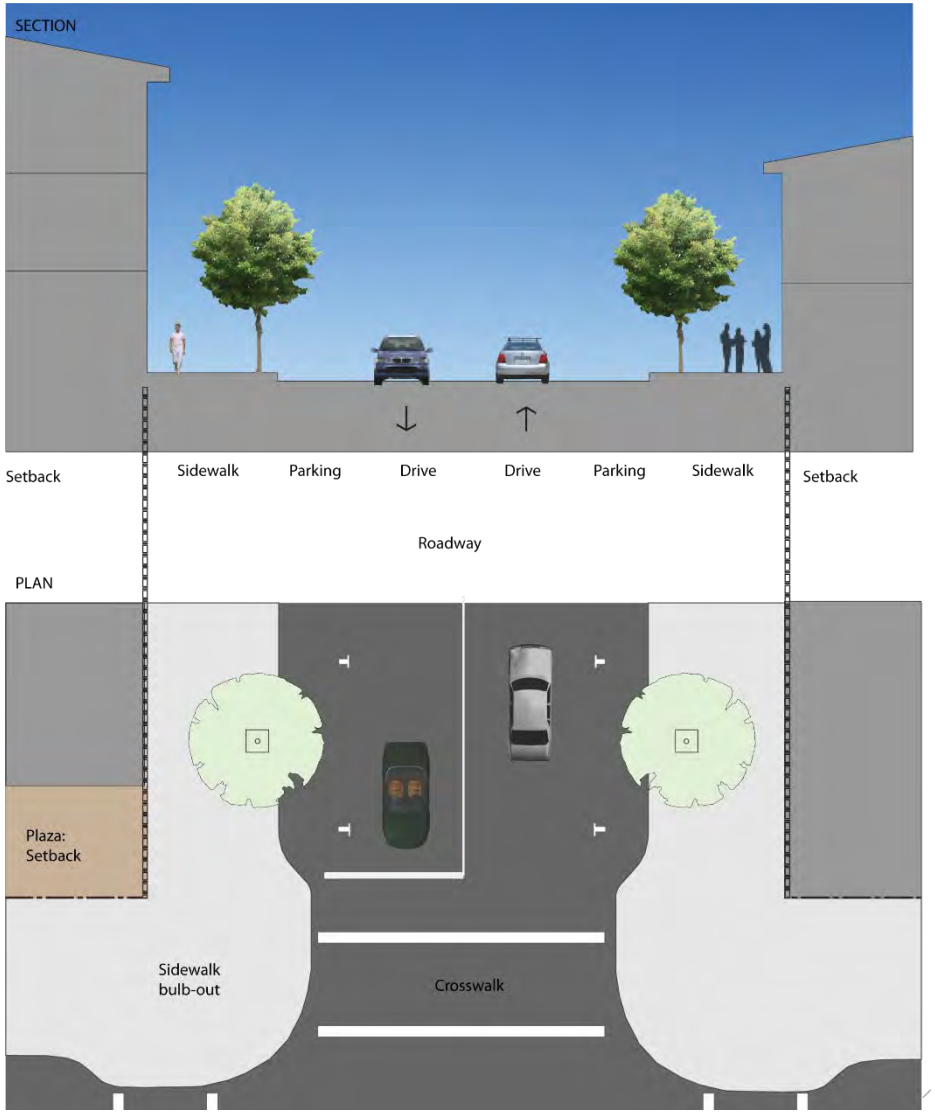
Neighborhood park with a central pedestrian shade structure

Neighborhood Park with central water feature, seating areas, and children play areas

# NEIGHBORHOOD STREET CONCEPTS FOR THE T3 AND T4 TRANSECT ZONES

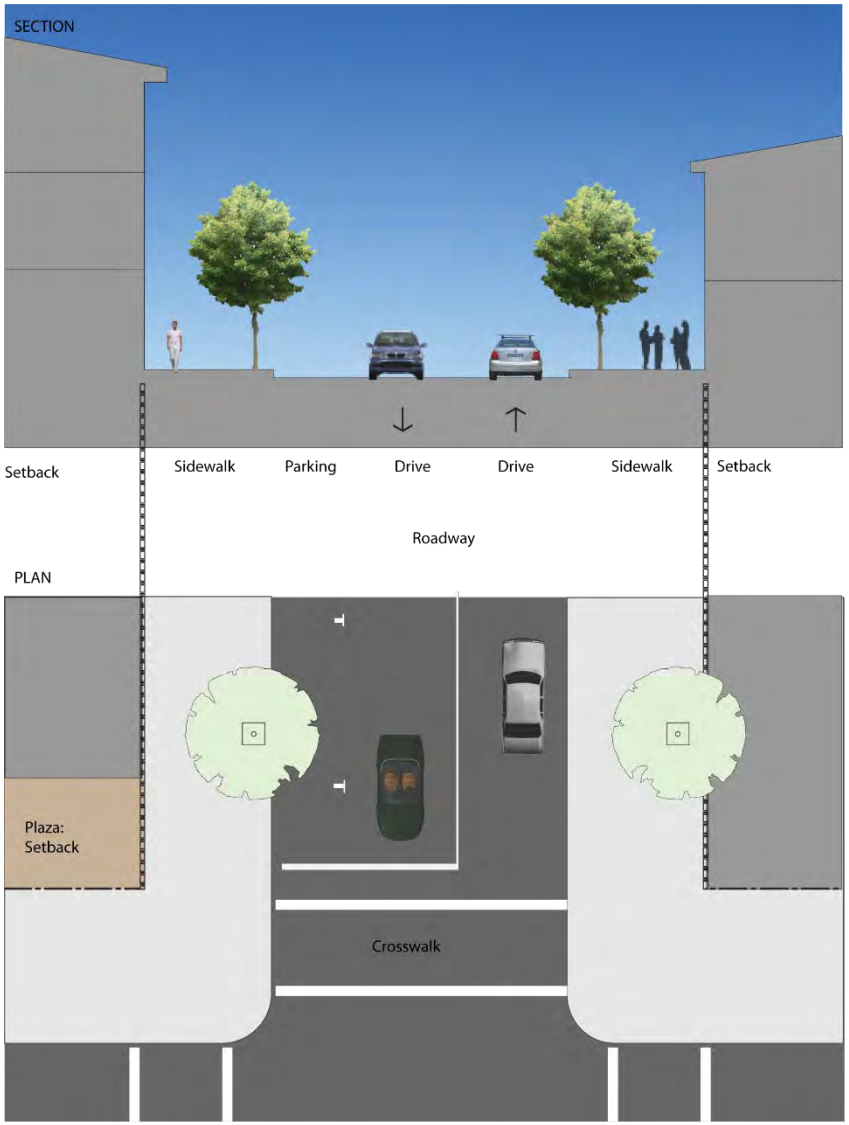
## NEIGHBORHOOD STREET 1

2-way traffic with curbside parking on both sides



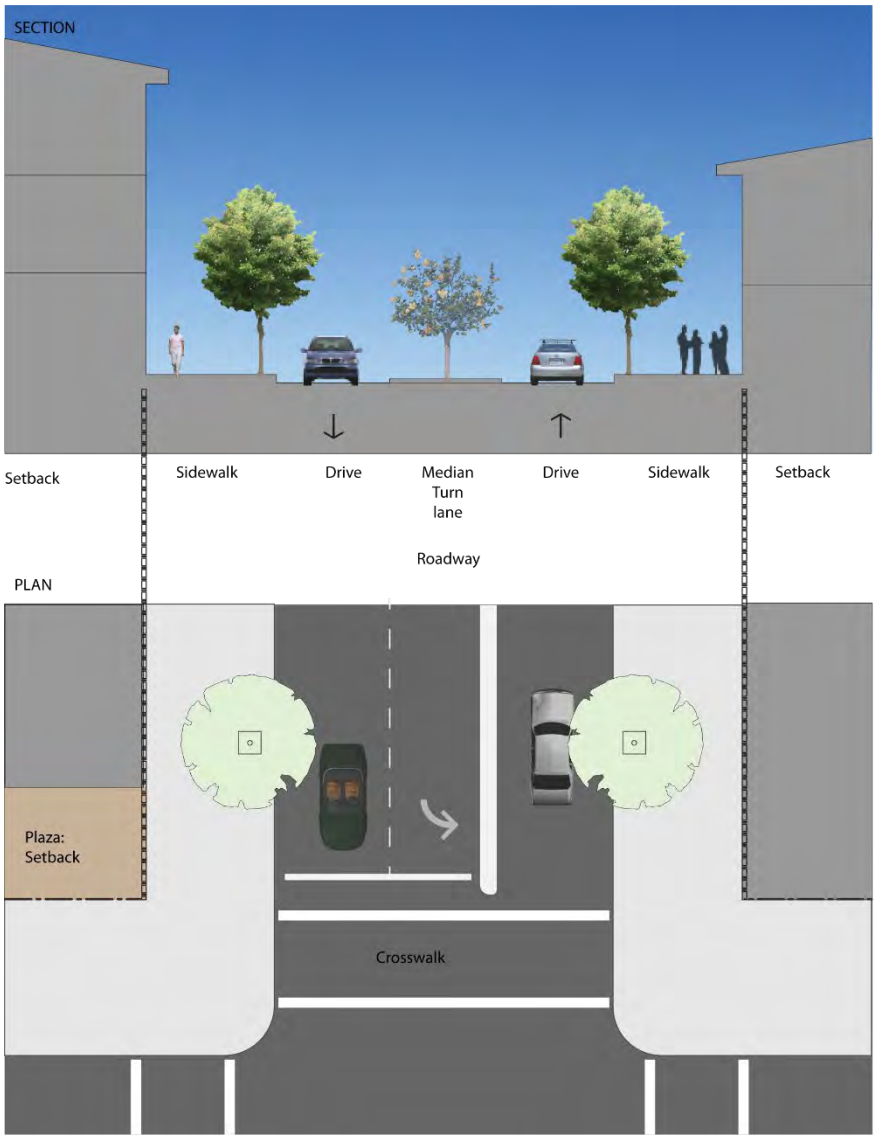

## NEIGHBORHOOD STREET 2

2-way traffic with curbside parking on one side



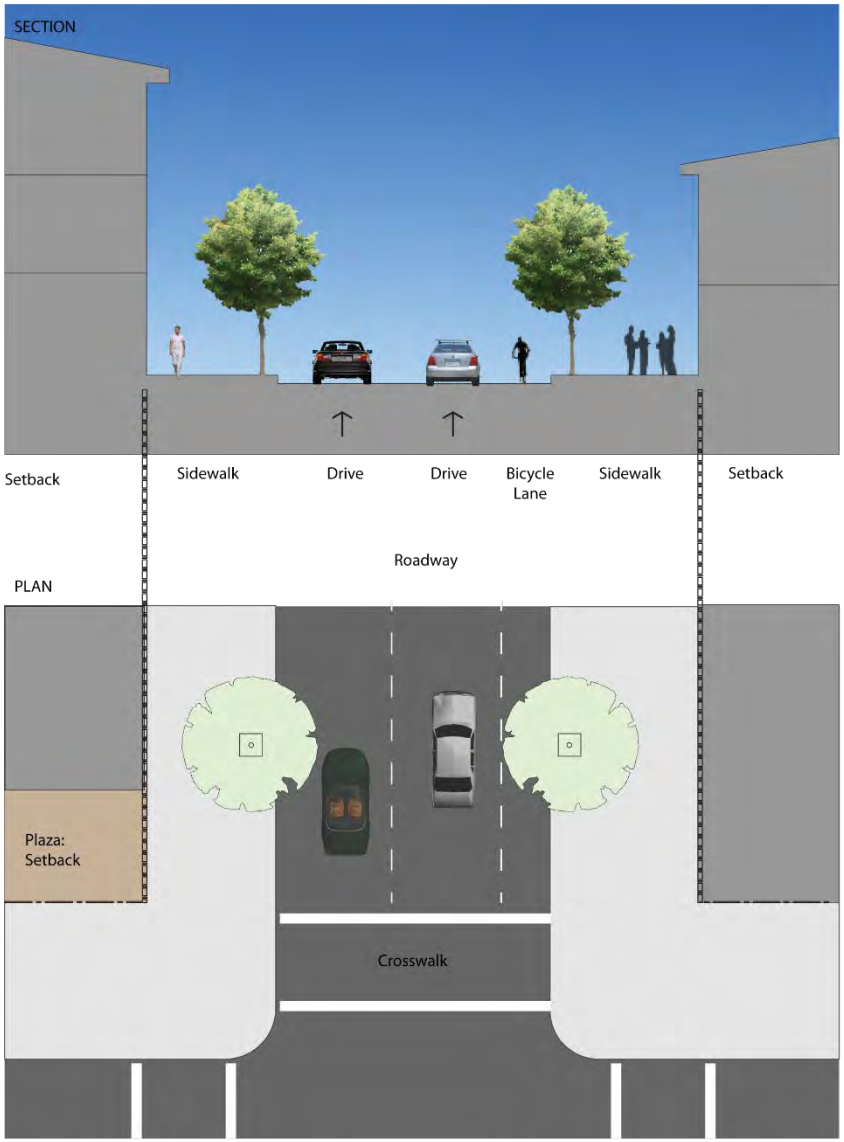
## NEIGHBORHOOD STREET 3

2-way traffic with median and left turn



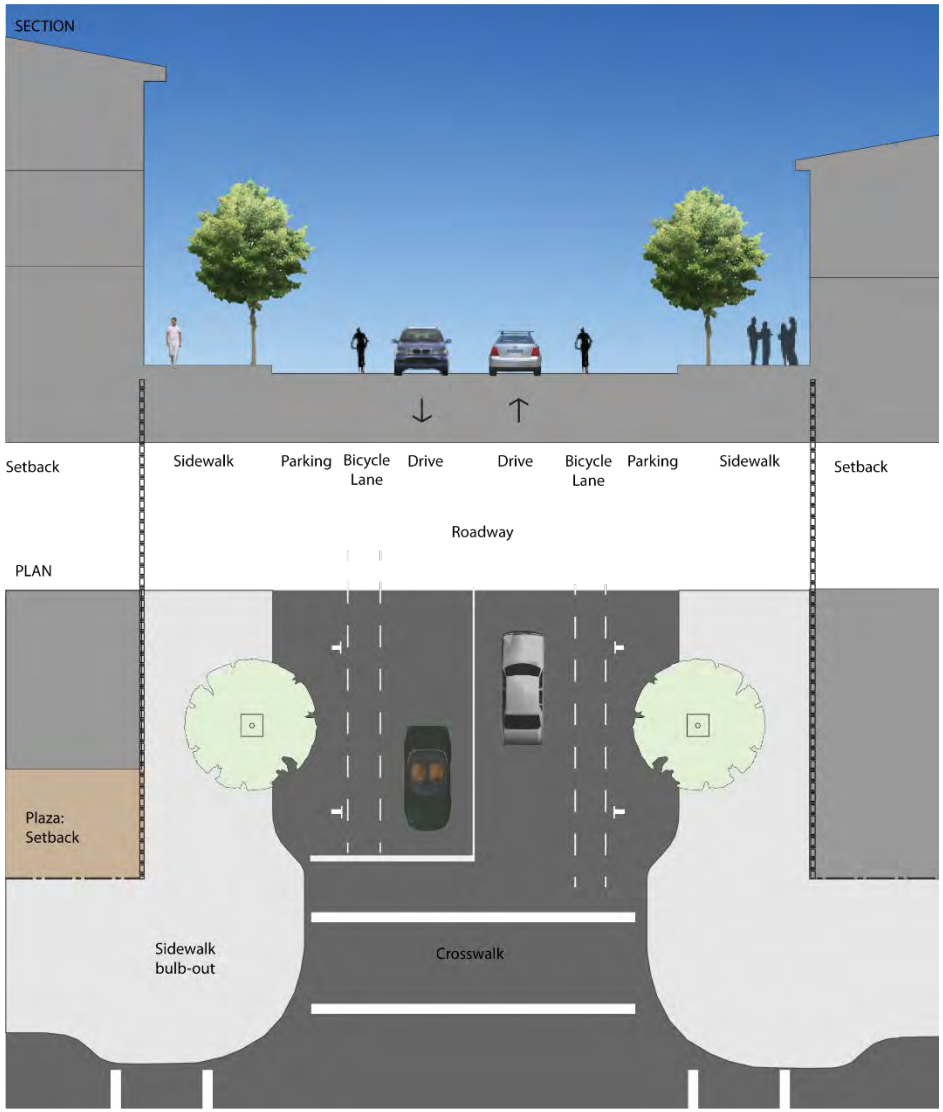

## NEIGHBORHOOD STREET 4

2-way traffic with bicycle lane



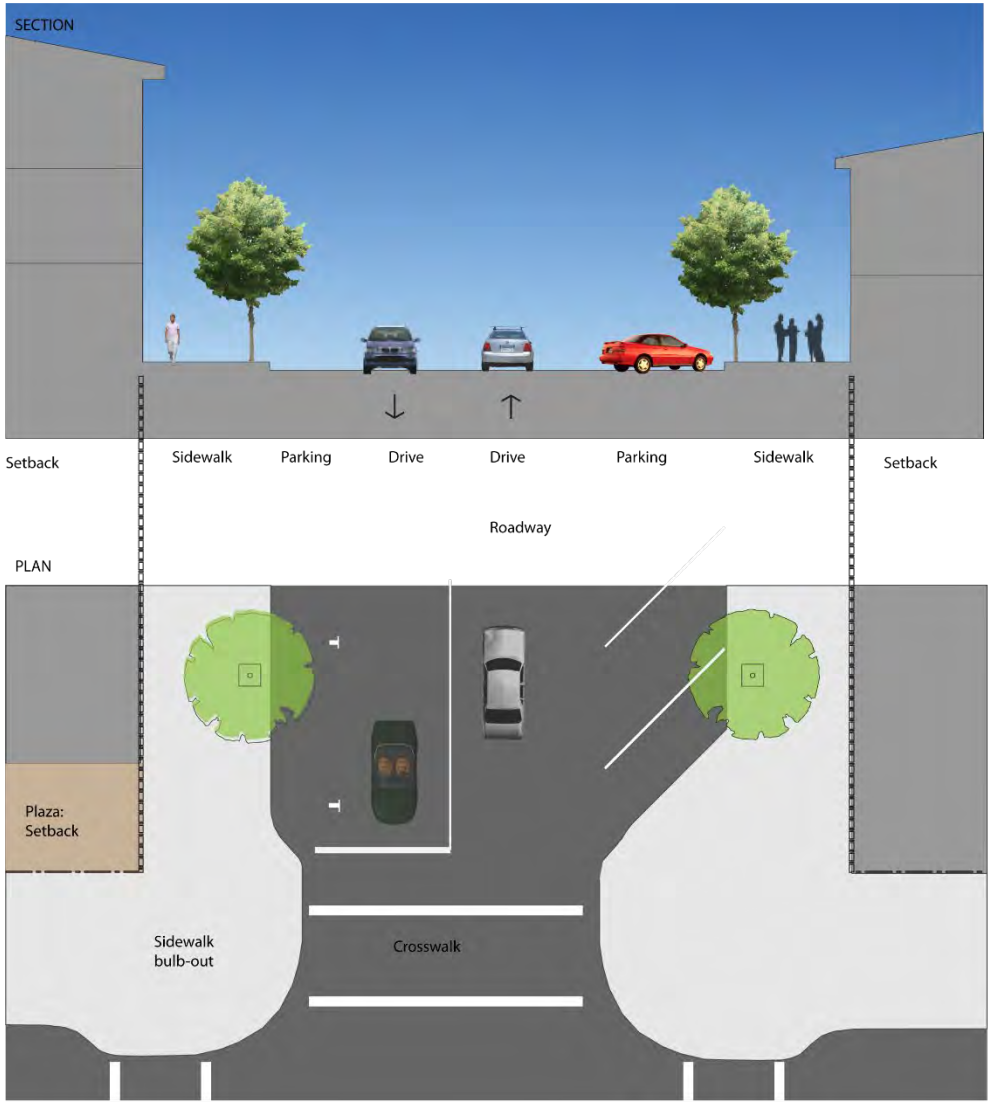
## NEIGHBORHOOD STREET 5

2-way traffic with curbside parking on both sides and bicycle lane




## NEIGHBORHOOD STREET 6

2-way traffic with curbside parking on one side and diagonal parking on the other side



# 4. DESIGN AND STREETSCAPE GUIDELINES

# DESIGN GUIDELINES

While the transect provides direction for form and land use, qualitative design guidance employs a traditional neighborhood design (TND) approach to the design and placement of individual buildings that addresses street hierarchy as well as the ways a new development can activate the pedestrian realm along streets and public spaces to create neighborhoods with individual character and treatment of its exterior surfaces. All design guidelines need to comply with VDOT standards, including the VDOT Road Design Manual. The manual addresses, but is not limited to, clear zones, non-breakaway features such as trees, public roadways, access management, entrance spacing, intersection sight distance, and crosswalks.

**A. Building Placement**

The arrangement of buildings contributes significantly to the character and quality of life, in which form, scale, visual character, and experiential quality of the private and public realms can help make a neighborhood a desirable place to be. These qualities are desired in new commercial and residential developments to avoid the impression of a single development that is disconnected from the street.

Half- or full-block developments, in particular, can look monolithic in mass and form. It is critical to achieve a fine-grain neighborhood feel in such developments to ensure a pleasant, human-scale experience along the sidewalk.

The key guiding principles for the design of blocks and buildings are to:

1. Reinforce the framework of the UDA by focusing more density with a mix of uses within the neighborhoods of Stone Port and Stone Ridge.

2. Enhance the public realm with a consistent application of streetscape improvements within these areas.

3. Frame and define the street by placing buildings closer to the property line, with parking located in the rear or side, per What Makes a Neighborhood Guiding Principle #3: Buildings placed close to the street create a sense of place.

4. Express a neighborhood character that is defined by human-scale buildings that offer a variety in texture, form, scale, color, and material.

5. Address and activate the street at the ground floor with well-articulated and detailed ground-floor treatment, with frequent entrances and plenty of transparency.

Image 1: Compact street blocks, a mix of uses, and linear park space

Image 2: Consistent streetscape finishes


Image 3: Streetscape furniture

## B. Lot and Block Standards

Compact and smaller street block sizes facilitates a development form that promotes walkability.

1. Street layouts provide for development blocks generally in the range of 200-400 feet deep by 300-600 feet long to facilitate greater ease of walkability.

2. A variety of lot sizes should be provided to allow diverse housing choices.

3. Lot widths should create a relatively symmetrical street cross section that reinforces the street as a simple, unified public space.

## C. Block Modulation and Building Massing and Placement

The modulation of a block and the massing of buildings significantly impact how the size of the building is perceived by a person at street level. By breaking up a large building into smaller masses, a sense of the building's overall mass can be reduced, forming a more interesting block. Special attention should be paid to buildings that front onto the public realm, and to relationships between buildings.

1. Full-block developments (or greater than 300 feet in street frontage) should be broken into distinct volumes that are in proportion to one another, while preserving the integrity of the building's design, and creating transitions in bulk and scale, thereby avoiding repetitive elements or monolithic treatments.

2. To provide variety, avoid monotony, and distinguish different building volumes, building should use a variety of color, materials, and texture.

3. Mixed-use buildings that frame and define the street and express a neighborhood character contribute to the quality of the public realm and the pedestrian experience. Well-articulated and detailed street walls, and building frontage that is directly adjacent to the public realm, are important to the fabric of the area and help to establish a human-scale experience.

4. Mixed-use buildings should incorporate a variety of vertical and horizontal modulations to develop distinct architectural volumes, break up monotony, and create a fine-grain character.

5. The scale of building elements (such as roofs, doors, windows, porches, columns) should be chosen with the pedestrian in mind and should be proportioned to the building's height and volume. Visual order is achieved through a consistent use of these building elements in individual buildings. The coordinated repetition and massing of building forms and architectural elements achieves a proper rhythm of neighborhood buildings.

Image 4: Compact street blocks with pedestrian plazas and mid-block paseos

Image 5: Pedestrian plaza

The proper placement of buildings, and associated open spaces along streets, frame the public realm and reinforce the hierarchy of neighborhoods within each transect. Buildings should define and frame the public realm. Their placement and massing should create a street wall that complements the transect in which it is located.

6. The highly visible intersections should serve as gateways by using building placement, vertical architecture, and buildings set back to accommodate a pedestrian plaza.

**D. Commercial Building Design**

New development, designed with a pedestrian orientation, fosters a vital and active street life while creating an overall positive image. Buildings provide visual interest to pedestrians and serve as attractive backgrounds for public open spaces; the ground floor designs can enrich the pedestrian environment.

1. Entries to stores and ground-floor commercial uses should be visually distinct from the rest of the store façade, with creative use of scale and materials, such as windows, projecting or recessed facades, architectural details, color, and awnings. Commercial uses located at street level should provide a direct at-grade entrance from the public right-of-way, with door thresholds flush with the sidewalk level.

2. Architectural features such as awnings, canopies, and other design features which add human scale to the streetscape are encouraged and should be consistent with the overall design of the building.

3. Between 3 and 12 feet above the sidewalk, a minimum of 60 percent of the façade should contain windows of clear or lightly tinted glass that allow views of indoor space. Heavier tinted or mirrored glass should not be permitted.

4. Storefronts should remain unshuttered and minimally lit from within after business hours during active pedestrian times to illuminate adjoining sidewalks.

5. signage attached to storefront windows should be minimized to maintain two-way visibility.


Image 6: Ground floor commercial with creative use of materials and projecting and recessed facades.


Image 7: Suburban Walmart model adapted to a traditional neighborhood design. Building is brought close to the street.

### F. Ground-Floor Residential Use

Ground-floor residential units that are designed correctly provide "eyes on the street" and enliven the public realm.

1. The ground floor of residential building facades should be articulated at regular increments to differentiate individual residential units from each other and from the overall massing of the building, and to provide a rhythm of individual units along the street.

2. Street walls containing ground-floor residential units should be set back up to 10 feet from any property line fronting a public street. Stoops and landscaping should be provided in this setback to provide a buffer between the sidewalk and the units' living areas.

3. Ground-floor residential units should be raised above the adjacent sidewalk grade to provide an additional buffer and window-privacy.

4. The area between 3 and 12 feet above the sidewalk of street-facing ground-level residential units should have clear tinted, or-reflective windows.

5. Fences and gates should be utilized within the setback area to demarcate private open space attached to a residential unit. Solid walls or fences should not exceed a height of 48 inches above grade.

6. Each street-facing unit should be identified either on the door or the adjacent wall.

### G. Building Entries and Facades

The building facade and entry is a critical component of the public realm.

**Residential Buildings**

1. The architectural features, materials, and the articulation of a facade of a building should be continued on all sides visible from a public street or courtyard.

2. The front facade of the principal building on any lot should face onto a public street.

3. The primary entrance to any building should face onto a public street.

4. The front facade should not be oriented to face directly toward a parking lot.

Image 8: Townhomes with entries from the sidewalk

Image 9: Townhomes with entries from the sidewalk

5. Porches, pent roofs, roof overhangs, hooded front doors, or other similar architectural elements should define the front entrance to all residences.

**Commercial Buildings**

1. For commercial buildings, a minimum of 50 percent of the front facade on the ground floor should be transparent, consisting of window or door openings allowing views into and out of the interior.

2. Building entrances and windows are located along street frontages to break up blank walls and improve the pedestrian experience.

3. Building frontages should be set near the sidewalk and building sizes should be consistent, providing a sense of enclosure for the street.

4. Architectural detailing and applied decoration should enliven facades and break down building sizes to human proportions.

5. Blank lengths of wall exceeding 50 linear feet are discouraged.

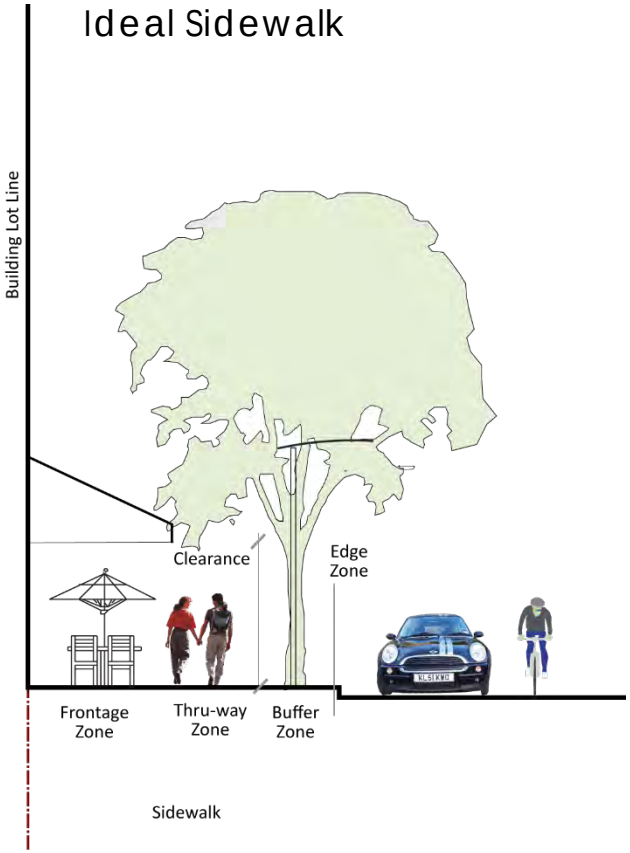
6. Different elements should be used to create distinct architectural features (by using materials, fenestration, heights, window types, etc.) to exhibit incremental and diverse street faces.

## H. Utilities

All utilities should be considered as part of the overall design early in the process.

1. All utilities, such as backflow prevention devices, groupings of meters, etc. should be located outside the public right- of-way within a building alcove, utility room, or landscaped area and be fully screened from view of the public right-of-way.

2. The utility needs of future commercial tenants (e.g., grease traps, exhaust chutes, air conditioning) should be anticipated in the initial building design to avoid difficulty when retrofitting buildings after construction.



## Streetscape Design

Sidewalks within the Neighborhood Center (T4) and Transition (T3) Transect Zones should consist of a curb zone, buffer zone, pedestrian zone, and frontage zone. Where appropriate, the area beyond the building lot line may be used as outdoor gathering spaces for diners, etc. See diagram, Ideal Sidewalk Section, and description below:

Curb Zone (6 inch curb)
The edge zone, sometimes referred to as the curb zone, is the interface between the road-way and the sidewalk.

Buffer Zone
This zone buffers the active pedestrian zone from street traffic. The buffer zone accommodates public amenities such as street trees, street lamps, benches, bike racks, news racks, mailboxes, transit shelters, fire hydrants, utility poles, and utility boxes.

Pedestrian Zone
Located between the buffer zone and the frontage zone, the pedestrian zone allows for unimpeded pedestrian circulation. It is free of all obstruction, including utility boxes and railings demarcating outdoor dining.

Frontage Zone
The frontage zone lies between the pedestrian zone and adjacent buildings or property lines. Movable outdoor seating and dining may be situated beyond the building lot lines.

### A. Sidewalks

Sidewalks should meet all state and local requirements for adoption into the public street system, and should also meet Americans with Disabilities Act (ADA) requirements, where applicable.

1. Striped crosswalks should be included and well-marked at all signed or signaled intersections.

2. The pedestrian zone should be a minimum of five feet wide.

3. Outdoor seating, either general-purpose or restaurant and café seating, is encouraged beyond the frontage zone, within the building lots.

4. Open seating areas without railings are encouraged wherever possible but, if required, should be as open and unobtrusive as possible.

5. If possible, all utility boxes should be placed underground. If this is not an option, then all utility boxes should be placed in the buffer zone

Image 10: Sidewalk seating


Image 11: Sidewalk cafe seating

**B. Street Tree and Landscape Design**

All plant material should be selected from varieties that are native to the Commonwealth of Virginia, when possible.

1. All streets should have a regular pattern of street trees for aesthetic value, and to shade sidewalks.

2. Street trees should generally be placed up to 40 feet apart, and planted in the buffer zone. Street trees may be planted in planting beds, or may be installed with tree grates to create additional navigable space.

3. Evergreen trees should be used at strategic locations for screening and buffering parking, trash compartments, and other back-of-building features, due to their dense foliage, but also incorporated into landscaping in parks and civic spaces to enhance aesthetics during winter.

4. Deciduous shrubs should be used in parks, commercial areas, and other community spaces. Evergreen shrubs can be used for visual interest, as well as for screening of items like utility meters and HVAC equipment.

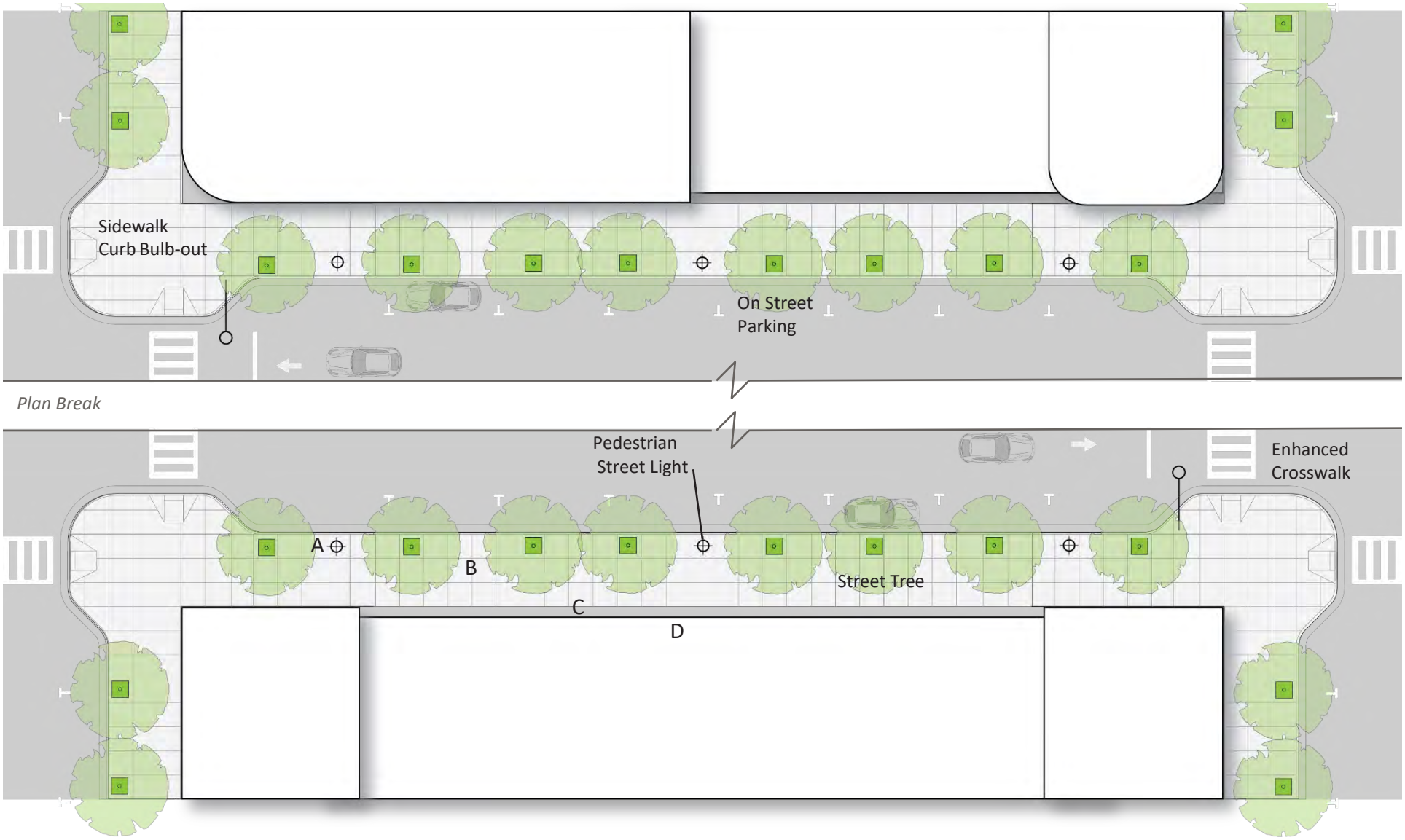
**C. Tree Location**

Street trees should be selected based on their mature size and located at an adequate distance from the street and adjacent buildings to maximize the trees' long-term health.

1. Street trees should be planted a minimum distance of eight feet (8') from a building face, although a greater distance may be desirable, depending on the tree species.

2. Tree wells should be adequately sized to contribute to the long-term health of the trees and to accommodate root balls large enough to replace a dead tree with a relatively mature one.

3. Street grates should cover a minimum area of 24 square feet (e.g., 4' x 6').




TYPICAL STREET BLOCK WITH STREET TREE LAYOUT

A. Curb Zone
B. Buffer Zone
C. Pedestrian Zone
D. Frontage Zone

**D. Planting Strips**

The pedestrian realm may be enhanced through planting strips in a buffer zone.

1. Planting strips should not be located where pedestrian traffic is high or where the strips would otherwise impede pedestrian flow.

2. Planting strips should be located in the buffer zone only and should be planted with low-growing, native and/or drought-tolerant plants with low water and maintenance requirements.

3. Planting strips could be slightly raised and bordered with a low protective edge to create separation from foot traffic. To curb dog use, planting strips could be surrounded by a low fence often referred to as an ornamental street-tree fence integrated into the planting strip.

**E. Street Corner Radii**

1. Corner Radii. The roadway edge at street intersections should be rounded with a maximum radius of 15 feet for neighborhood streets and 20 feet for intersections.

2. Curb cuts for driveways to individual residential lots should be prohibited along Stone Spring Road and along Stone Port's primary neighborhood streets (See Street Hierarchy Map on Page 36) for a continuous and uninterrupted walking and bicycling experience.

Curb cuts should be limited to intersections with other streets or access drives to parking areas for commercial, civic, or multifamily residences.

**F. Street Furniture**

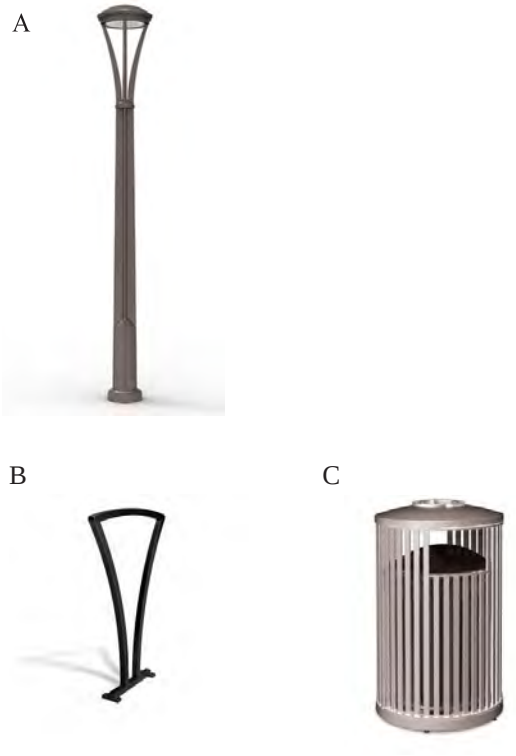
An additional enhancement of streets he is the inclusion of street furniture when the width of the sidewalk or public or private surface allows for it.

1. Street furnishings should be located in the buffer zone.

2. Street furniture includes benches, bicycle racks, bollards, planters, bike racks, and other accessories for the convenience of pedestrians or cyclists. Careful selection and use of street furnishings enhances the street environment, provides a clean, consistent look, and makes ongoing maintenance easier and less expensive.

3. A family of distinct pedestrian street light fixtures that employ energy-efficient luminaries, and are designed to minimize light pollution, should be considered for the T3 and T4 Transect Zones . The pedestrian light fixtures should convey a distinct character should be complementary to the street furnishings.

Image 12: Narrow street corner radii




Street Furniture Family: A. Pedestrian Lighting, B. Bicycle Rack and C. Trash Receptacle

4. Furnishings for primary streets may be distinct and of higher quality to denote their important connections to other streets within the UDA. Additional elements could be considered for such streets, such as information kiosks.

5. Utility boxes should be painted with a color consistent with the family of street furnishings to downplay visibility.

## G. On-Street Parking

Streets with commercial land uses at the ground floor should have on-street parking directly available, where possible.

## H. Surface Parking

All surface parking lots should be located at the rear (behind) or at the side of a building so that it is not visible from any street frontage.

1. Surface parking areas exposed to view from public streets, sidewalks, and other public spaces should be screened from the street and sidewalk with a wall or hedge that is a minimum of 36" high and a maximum of 48"high .

2. A parking lot or garage should not be adjacent to or opposite a street intersection.

3. Surface parking lots or garages should provide bicycle parking spaces.

4. Adjacent on-street parking may apply toward the minimum parking requirements.

Christiansburg UDA Plan. Vision for new and infill development with surface parking located in the interior of the block.


Example: Parking located in the interior of the block

## I. Interface between Buildings and Neighborhood Parks

Each neighborhood in this plan, Stone Port, Stone Ridge, Boyers Crossing, Massanetta Springs, and Crossroads, has proposed parks to organize future development around them. Buildings facing these parks, either across the street or on adjacent parcels, can enhance the park experience, serve as an architectural backdrop to parks, frame the outdoor space, and provide a greater degree of safety through "eyes on the park." Designers of park-fronting buildings have a heightened responsibility to the public realm.

1. Buildings should engage adjacent parks through active ground-floor uses, such as restaurants and cafés, and with transparent storefronts to create visual interest. They should include spill-out space for outdoor dining or seating on the sidewalks facing parks.

2. Building entrances should face parks to encourage building occupants to cross the street to the park and for park visitors to shop and dine in adjacent businesses.

3. Blank walls with few windows and a lack of ground-level interest are strongly discouraged.

4. Parks and plazas should be designed to allow for clear views in, out, and through them.

5. Publicly accessible open space should include principal access points to the surrounding street network, preferably at street intersections.

6. Principal access points should remain unimpeded by walls, steps, or other barriers; they should act as seamless extensions of the sidewalk.

7. Principal access points should meet the adjoining street line at the elevation of the adjoining sidewalk.

8. Fencing and walls at the edges of parks should be minimized.

9. Due to the topographic issues within the UDA area, steps and ramps will be needed, but should be gradual and generously wide.

10. Major walkways should be of a smooth, durable material, which may include stone, concrete or brick pavers, asphalt, decomposed granite paving, and wood decking. An additional zone on either side of this walkway may be provided to accommodate trees and seating, which may have textured paving such as cobblestone or crushed stone.

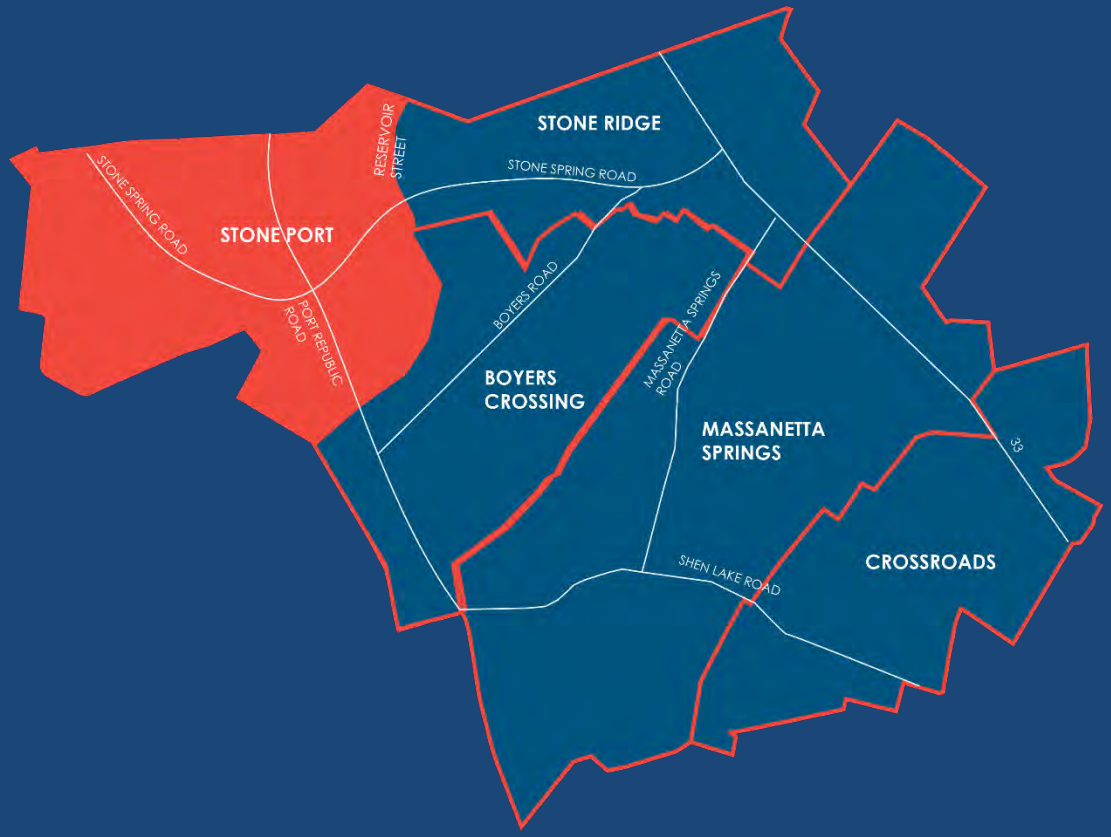
11. Other park amenities may include open-air cafés, kiosks, and pushcarts.

Image 13: Neighborhood park with mid-block crossing

Image 14: Neighborhood park with new residential development

Image 15: Neighborhood park at commercial strip mall.

# STONE PORT FOCUS AREA NEIGHBORHOOD CONCEPTS




## 2018 Aerial

KEY
1. Walmart Neighborhood Market
2. Wendy's
3. Bojangles
4. Altitude I (Primarily Student Housing)
5. Office building
6. Commercial building
7. Dental office
8. Bank
9. Office


**PHASE 1 STREET GRID OPTION -** Concept to create more compact street blocks that improves walkability

KEY
1.Primary neighborhood street
2.Park
3.Pedestrian promenade
4.Stone Spring Pedestrian and Bicycle Trail
5.New street

Stone Port is defined by the intersection of Stone Spring Road and Port Republic Road, with future development gradually moving east toward Boyers Crossing with a compact street grid. Neighborhood parks are supported by new development and pedestrian promenades that link the major streets of Stone Port to the interior development blocks. Zoning Ordinance amendments will be required to implement the Neighborhood Center Transect Zone's TND principles, such as reducing building setbacks, lot sizes, and parking requirements; requiring common area; and possibly updating permitted uses for new development to effectuate the transition from the existing suburban development to the more compact Neighborhood Center.

The absence of these amendments has resulted in land-consumptive suburban development in an area of the County bearing high land values. TND facilitates more commercial or residential units on the same amount of land, thereby producing more revenue per acre, which can help pay for infrastructure and public services.

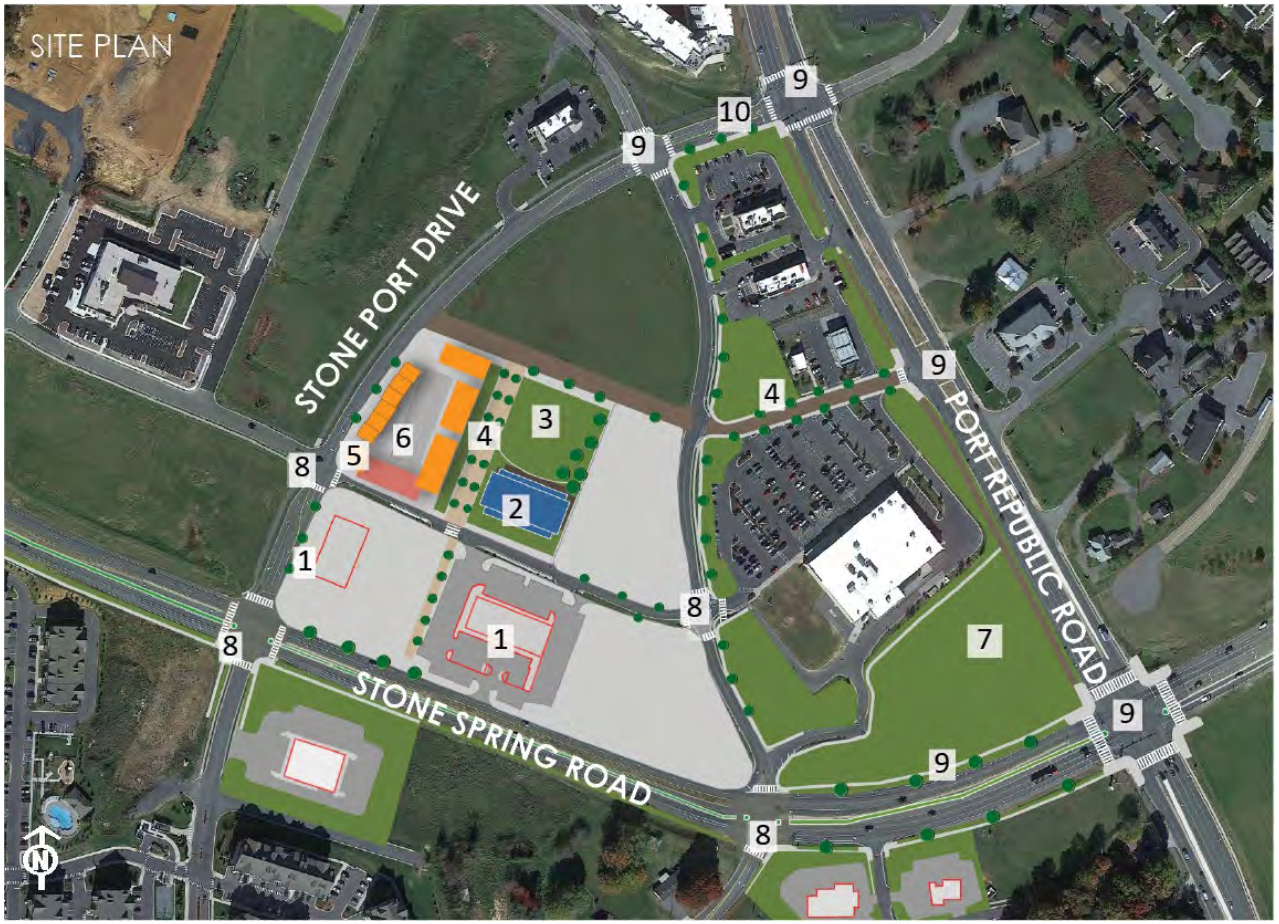
The transitional period, as Stone Port shifts from construction of buildings located in the center of lots and parking surrounding them to buildings close to sidewalks and parking located primarily to the rear of buildings, will require flexibility in front, side, and rear setbacks. For example, a vacant lot is located between two lots that have buildings set back 35 feet (a suburban setback) from the sidewalk. When construction of a building on the vacant lot occurs, rather than setting the building close to the sidewalk, it could be set back by perhaps half of the suburban setback distance, thereby avoiding an exaggerated undulation of building facades. Where no suburban development adjoins new construction, TND principles can be fully implemented.

SITE PLAN - FIRST PHASE: WEST OF PORT REPUBLIC ROAD

Objective: Establish Stone Port as a destination for neighborhood-scale mixed uses.

As a possible neighborhood center, locate a library or civic building with a park at the center of the development site. Connect the civic building and park to Stone Spring Road with a pedestrian promenade.

Any features, such as street trees, crosswalks, and sidewalks, located in or near VDOT roads need to meet VDOT requirements.




KEY

1. Existing commercial building
2. Civic Building (amenities may be conceptual or built by other private or non-profit entities)
3. Park
4. Pedestrian promenade
5. Architectural emphasis at corner
6. Residential emphasis
7. Pedestrian walkway
8. Striped crosswalks
9. Add sidewalks at all locations where missing, as part of the first phase, including street trees and pedestrian street lights.

NEIGHBORHOOD EXAMPLES

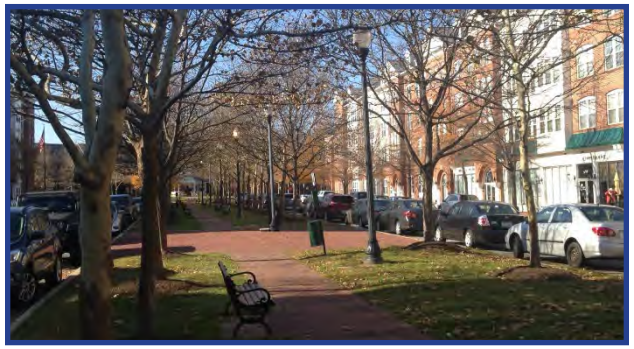


Image 1: Pedestrian promenade

Image 2: Library with outdoor park plaza


## STONE PORT - SECOND PHASE - STONE SPRING RD AND PORT REPUBLIC RD INTERSECTION CONCEPT

KEY

1. Promote the Stone Spring Rd. and Port Republic Rd. intersection as akey development opportunity.
2. New development should emphasize the intersection with greater verticality. Parking should be placed behind the buildings.
3. Implement sidewalks that are currently missing, and add street trees and pedestrian streetlights.
4. Improve pedestrian connectivity through developed blocks with pedestrian pathways.
5. New Park
6. New Civic Building
7. Proposed commercial development


## STONE PORT - THIRD PHASE - STONE SPRING RD AND STONE PORT BLVD FRONTAGE CONCEPT

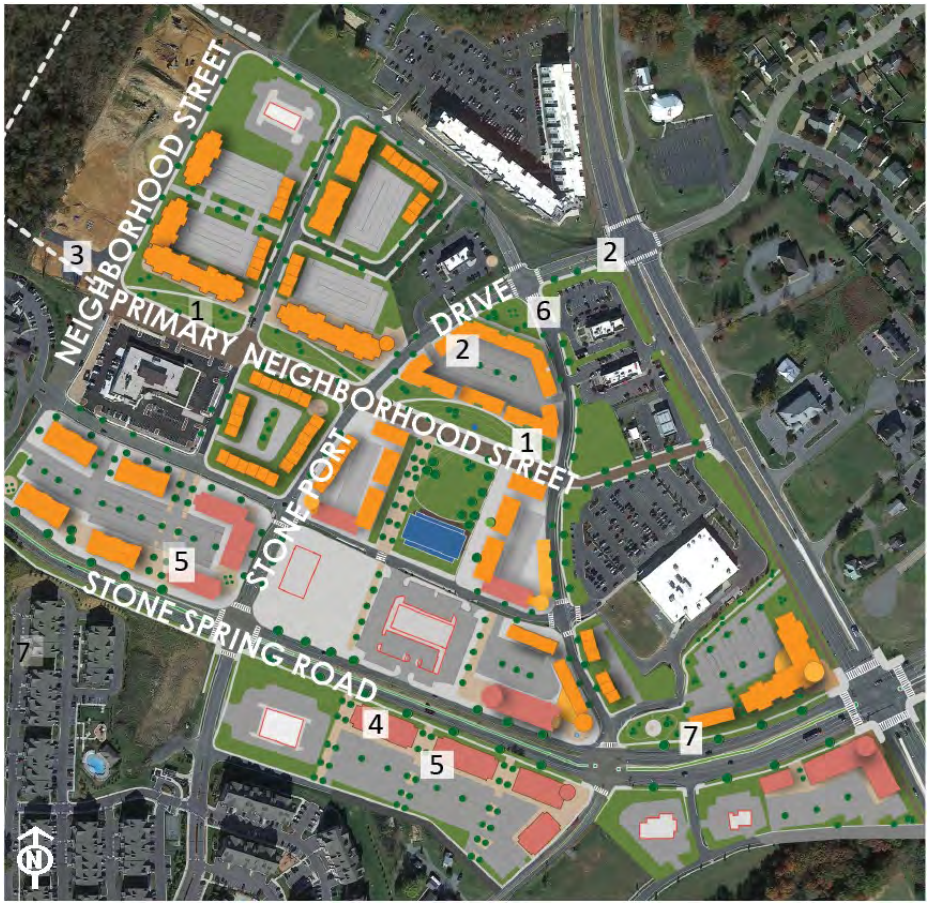
KEY

1. Promote the Stone Spring Rd. frontage and the gateway into the development site at Stone Spring Road and Stone Port Drive.
2. Complete Stone Spring frontage with parking located behind the buildings.
3. Emphasize the corners into the Stone Port development site with plazas, enhanced landscape, or articulated architecture.
4. Frame the park edges with active development frontage.
5. Connect Stone Spring Road to park areas with pedestrian promenades.
6. Proposed commercial development
7. New park
8. New Civic Building


## FUTURE PHASE - EAST OF PORT REPUBLIC ROAD CONCEPT

KEY

1. Provide for mixed-use or commercial with parking behind the building.
2. Provide for townhomes (T3 Transition Zone).
3. Maintain visibility through the site or provide pedestrian pathway.
4. Emphasize the corners at the intersection with future development.
5. Promote development along the south edge of Stone Spring Road.
6. Realign Albert Long Drive for a more feasible development footprint.
7. Create a linear park-like experience to organize development.
8. Create new development opportunities, where feasible, add new sidewalks and street trees where missing.
9. Articulate entries into the Stone Port development site with pedestrian plazas
10. Existing office and health center buildings to remain.




## FUTURE PHASE - WEST OF STONE PORT BLVD CONCEPT

KEY

1. Create a primary neighborhood road with linear park-like experience.
2. Place buildings close to the street with the parking encapsulated.
3. Plan for the future extension of the primary neighborhood street.
4. Place buildings close to Stone Spring Road frontage with the parking placed behind.
5. Create pedestrian plazas or walkways out of space between buildings and align with new/existing roads, plazas, or with other green space beyond.
6. Create opportunities for parklets from undeveloped areas.
7. Articulate entries into the Stone Port development site along Stone Spring Road with landscape, public art, or pedestrian plazas.


## STONE PORT - ALBERT LONG DRIVE ALIGNMENT CONCEPT

Realign north end of Albert Long Drive and connect with Allen Road, via a right-in/right-out access at Port Republic Road, integrating the Stone Spring Pedestrian and Bicycle Trail concept, continuous sidewalk with street trees, and a neighborhood park. See Page 38, Stone Spring Pedestrian and Bicycle Trail at Reservoir Street for enlarged plan and elevation. Unsignalized crosswalks on VDOT-maintained roads need to be compliant with IIM-TE-384: Pedestrian Crossing Accommodations at Unsignalized Locations.

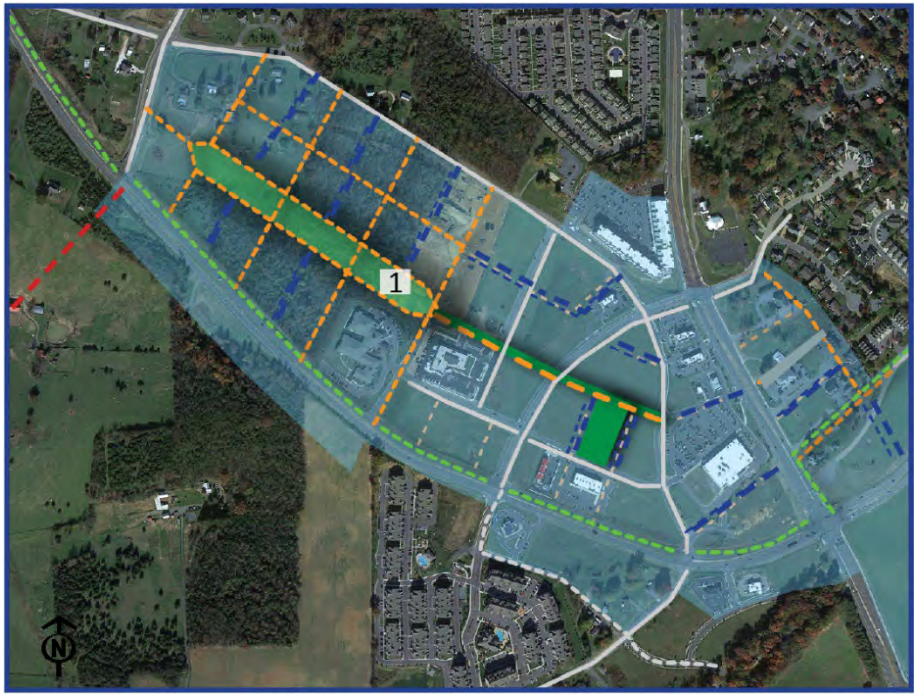
KEY

1. Realign Albert Long Drive by connecting it to Allen Road with a right-in/right-out access to Port Republic Road. (Subject to VDOT approval.)
2. Existing Albert Long Drive termination eliminated.
3. Integrate the Stone Spring Pedestrian and Bicycle Trail Concept with the realigned Albert Long Road.
4. Emphasize the Port Republic and Stone Spring intersection with future development.
5. Provide for enhanced pedestrian crosswalks with sidewalk bulb-outs.
6. New development should be placed close to the property line to frame the intersection. A vertical element (such as a tower), set back to accommodate a plaza or public art should be considered.
7. Provide for through block pedestrian walkways, where possible.
8. Provide for commercial or mixed uses with parking located behind the building.
9. Provide for townhouses (T3 Transition Zone).
10. Design new development to meet the design and streetscape guidelines of this Plan & the VDOT Road Design Manual.
11. Provide for a new neighborhood park, based on the realignment of Albert Long Drive.
12. Parking for commercial use.
13. Existing office buildings to remain.
14. Sidewalk along Stone Spring Road with connections to Health Campus Drive walkways.


## FUTURE STREET GRID EXTENSION - CONCEPT #1

KEY

1. Develop the Stone Spring Pedestrian and Bicycle Trail (green dash) concept, linking Stone Ridge and Stone Port neighborhoods.
2. Realign Albert Long Drive to connect with Port Republic Road.
3. Create a new neighborhood park as part of the phase 1 development of Stone Port.
4. Extend the primary neighborhood street as a way to organize contiguous development blocks.
5. Create a neighborhood park as part of future grid extension.
6. Create pedestrian promenades or pathways (blue dash) by promoting walkability between development sites and to parks, open space, and the Stone Spring Pedestrian and Bicycle Trail concept.

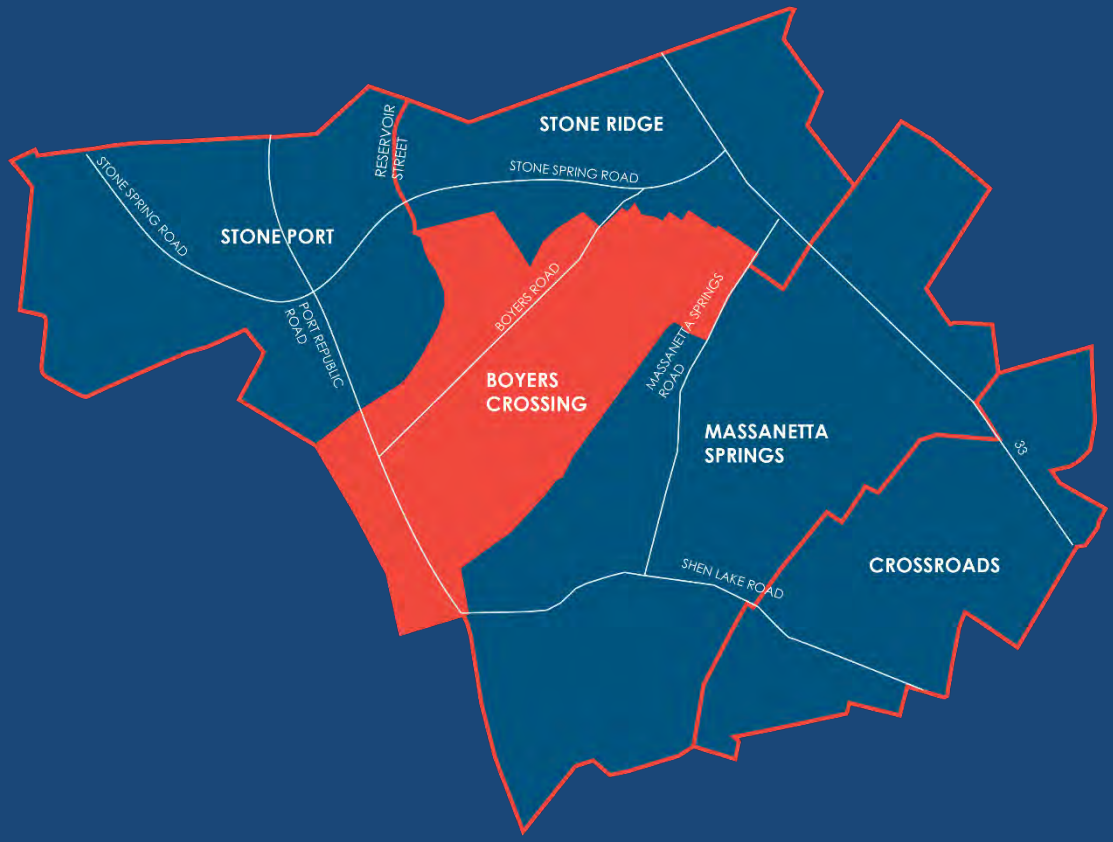



## FUTURE STREET GRID EXTENSION - CONCEPT #2

KEY

1. Extend the primary neighborhood street as a couplet with a neighborhood linear park at its center to organize development parcels. Organize pedestrian promenades or pathways to connect to the neighborhood linear park.

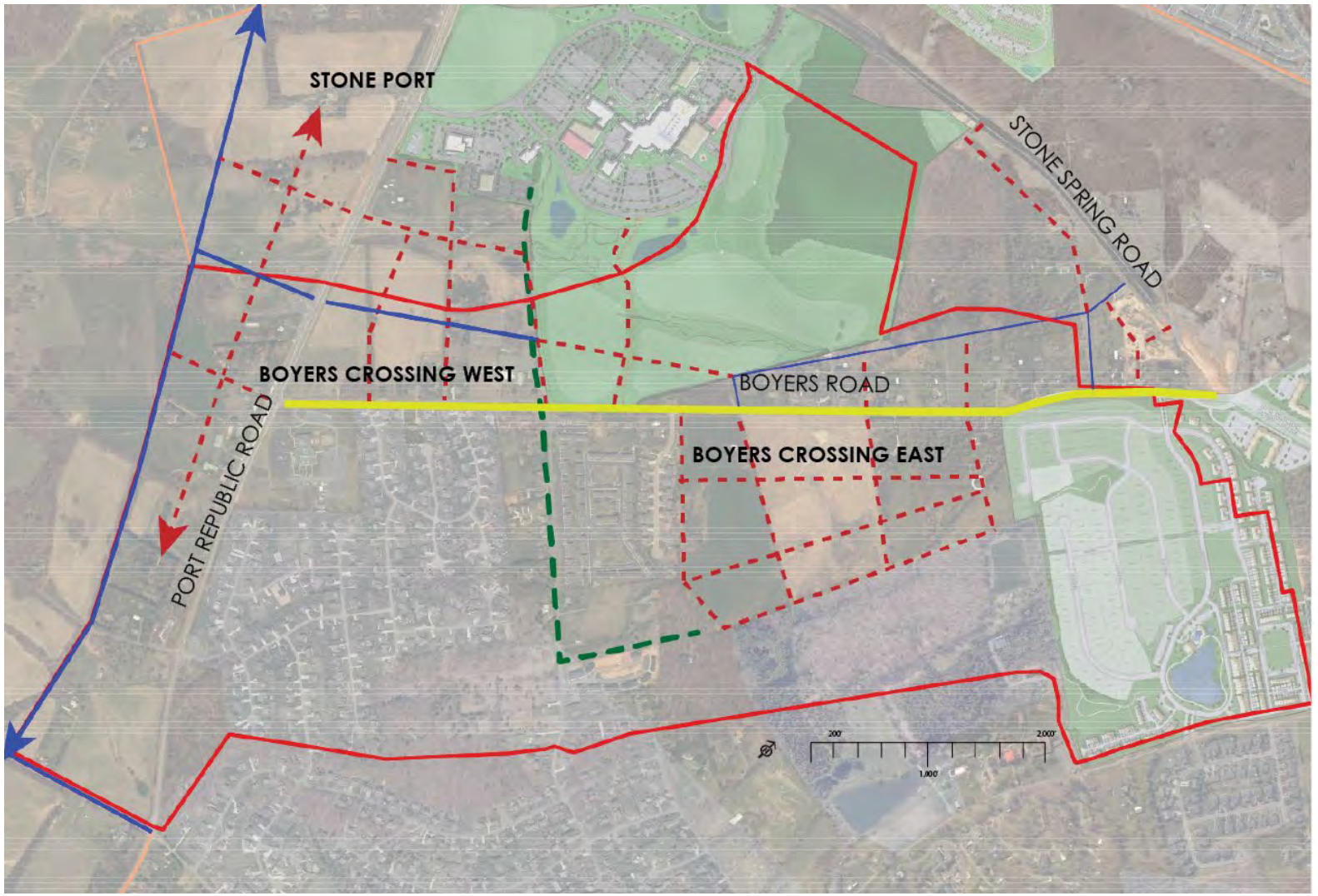
# BOYERS CROSSING FOCUS AREA NEIGHBORHOOD CONCEPTS



## BOYERS CROSSING

Boyers Crossing is the transition between the more compact Stone Port development proposed to the north and the established suburban areas to the south. The illustration below shows the conceptual interconnectivity between the Stone Port Neighborhood Center Transect and the Boyers Crossing Transition Transect.

Boyers Crossing is divided into Boyers Crossing West and Boyers Crossing East.

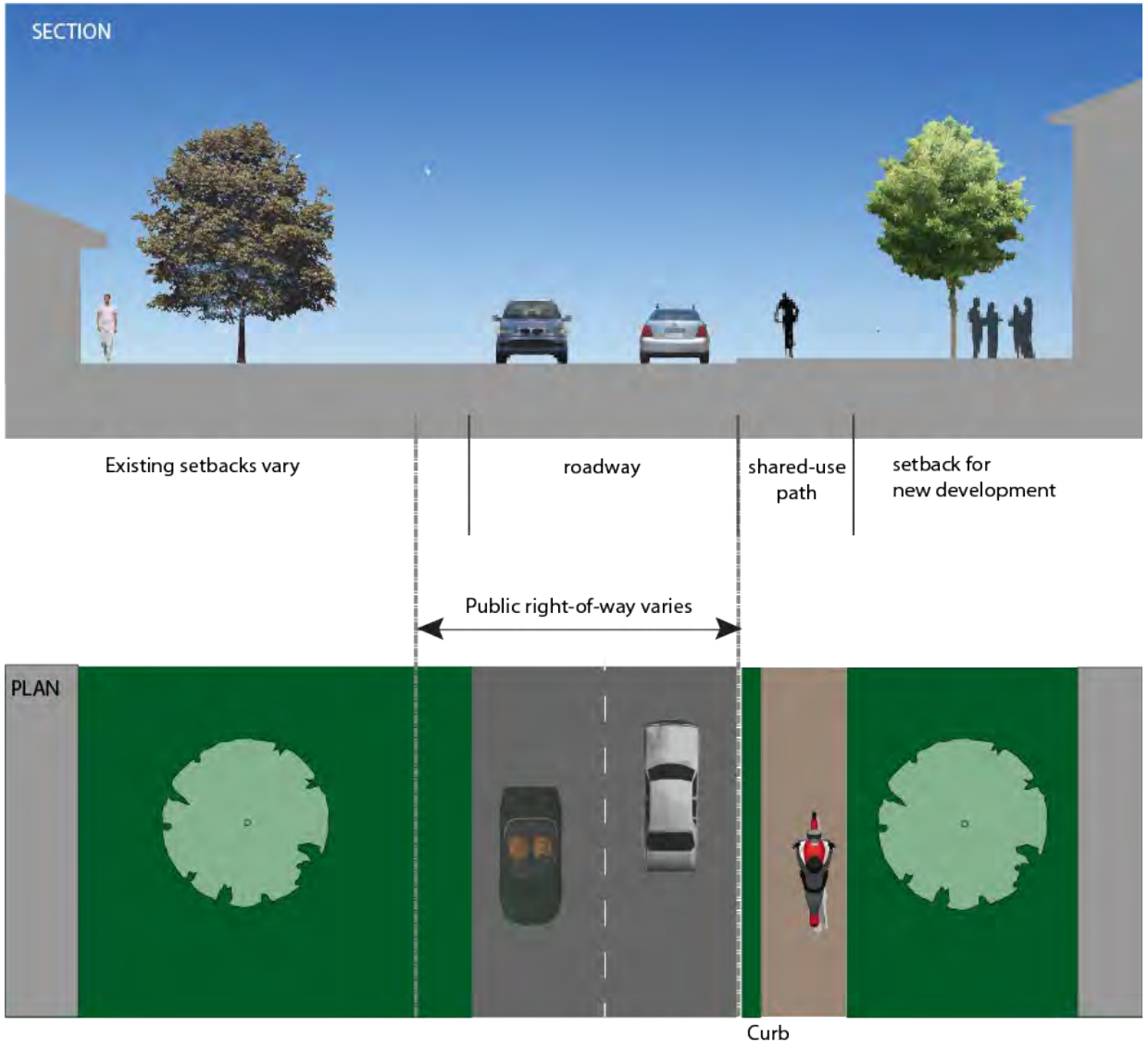


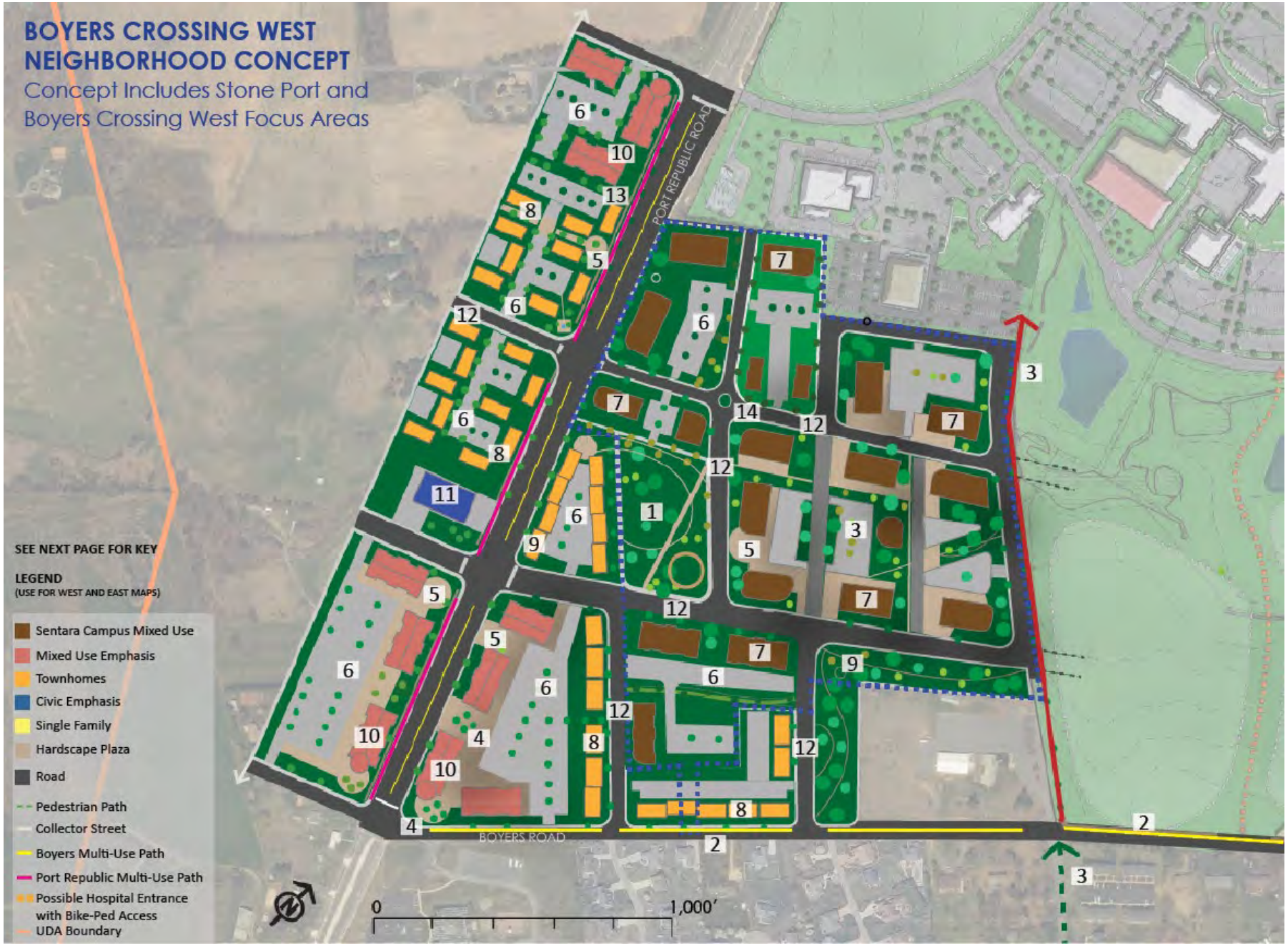
## CONCEPTUAL BOYERS CROSSING SECTION

With the construction of Stone Spring Road, US 33 was more efficiently connected to Port Republic Road, thereby enabling Boyers Road, which once served that function, to be used as a neighborhood street.

The continued construction of a shared-use path along Boyers Road will connect the Stone Spring Pedestrian and Bicycle Trail with the existing Port Republic Road shared-use path and its future extensions. An additional benefit is to enable residences and businesses to be accessible by bicyclists and pedestrians.

Zoning Ordinance amendments that reduce building setbacks, require smaller lot sizes, and adjust permitted uses for new development enable movement from existing suburban development to more compact Transition Transect development, while maintaining a neighborhood street character on Boyers Road. The proposed internal street grid will be built incrementally as part of each individual residential or commercial development or mixed-use node. New development along street frontages should face and be accessible from the street.




BOYERS CROSSING WEST
NEIGHBORHOOD CONCEPT
Concept Includes Stone Port and
Boyers Crossing West Focus Areas
PORT REPUBLIC ROAD
BOYERS ROAD
SEE NEXT PAGE FOR KEY
LEGEND
(USE FOR WEST AND EAST MAPS)
Sentara Campus Mixed Use
Mixed Use Emphasis
Townhomes
Civic Emphasis
Single Family
Hardscape Plaza
Road
Pedestrian Path
Collector Street
Boyers Multi-Use Path
Port Republic Multi-Use Path
Possible Hospital Entrance with Bike-Ped Access
UDA Boundary
0
1,000'

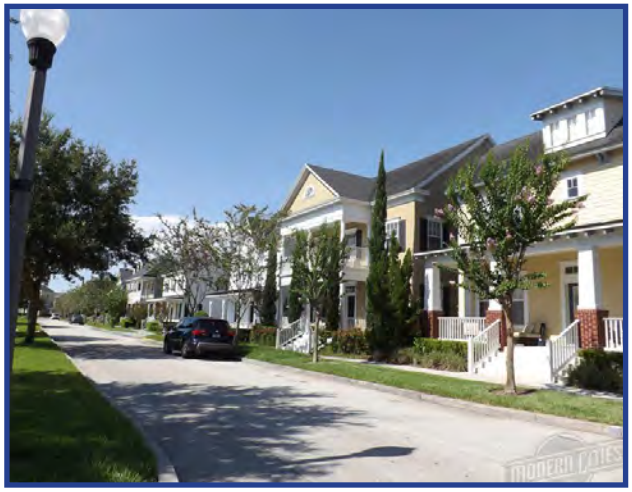
## WEST

KEY

1. Neighborhood Park
2. Boyers Multi-Use Path connecting Port Republic Road with Stone Spring Road
3. Extension of Taylor Spring Ln with multi-use path to connect Boyers Multi-Use Path and Sentara RMH Medical Center
4. Corner pedestrian plaza at gateway to Boyers Crossing. Development should emphasize the intersection of Boyers Road and Port Republic Road
5. Pedestrian plaza
6. Surface parking behind the building
7. Sentara RMH Medical Center Mixed Use Campus Buildings
8. Townhouses
9. Linear parklet concept
10. Commercial emphasis and conceptual form and placement of buildings
11. Fire Department location option
12. New roadway
13. Port Republic Multi-Use Path (existing)
14. Traffic calming feature

Located at the intersection of Boyers Road and Port Republic Road, Boyers Crossing West is planned with a neighborhood park with development located within a quarter-mile walking distance. The north end of this neighborhood concept falls within the Stone Port Focus Area. Commercial uses, including upper floor apartments, and townhouses line the frontage along Port Republic Road, with apartments, townhouses, and some single-family detached residences located to the west of this neighborhood concept.

Surface parking located within the block's interior



Mix of single-family and townhomes along the street frontage, with reduced setbacks


Commercial at the street frontage, parking located behind the building

Compact single-family residential development with reduced setbacks between 15 to 20 feet


BOYERS CROSSING EAST
NEIGHBORHOOD CONCEPT
BOYERS ROAD
0
200'
1000'

## EAST

Boyers Crossing East is more residential than Boyers Crossing West, but includes a mixed use node between Boyers Road and Stone Spring Road.

KEY

1. Neighborhood park
2. Linear park connecting Boyers Road to the neighborhood park
3. Pocket park to accommodate topography
4. Boyers Road Multi-Use Path linking Port Republic Multi-Use Path with the Stone Spring Bicycle and Pedestrian Path. Multi-Use Path located on the west side of Boyers Road crosses to the east side at Congers Creek and continues to Preston Lake Blvd
5. Pedestrian pathway connecting Preston Lake with Boyers Road Shared-Use Path and Sentara RMH Medical Center
6. New sidewalk
7. Development block with new sidewalk and curb and gutter (typical)
8. Parking behind the building
9. Rowhouses
10. Linear park between rowhome frontages
11. Single family
12. New roadway
13. Traffic calming device to protect neighborhood
14. Preston Lake

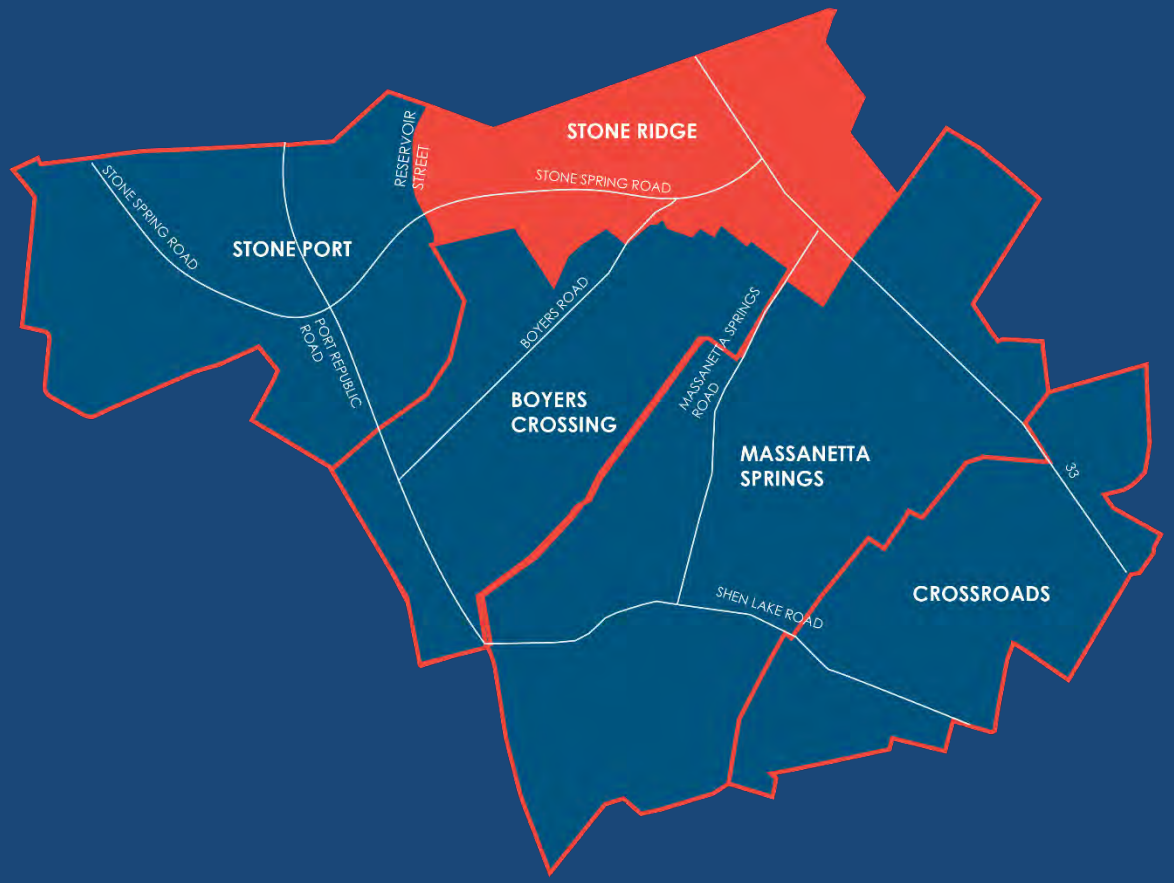
Townhomes with entries directly from the street

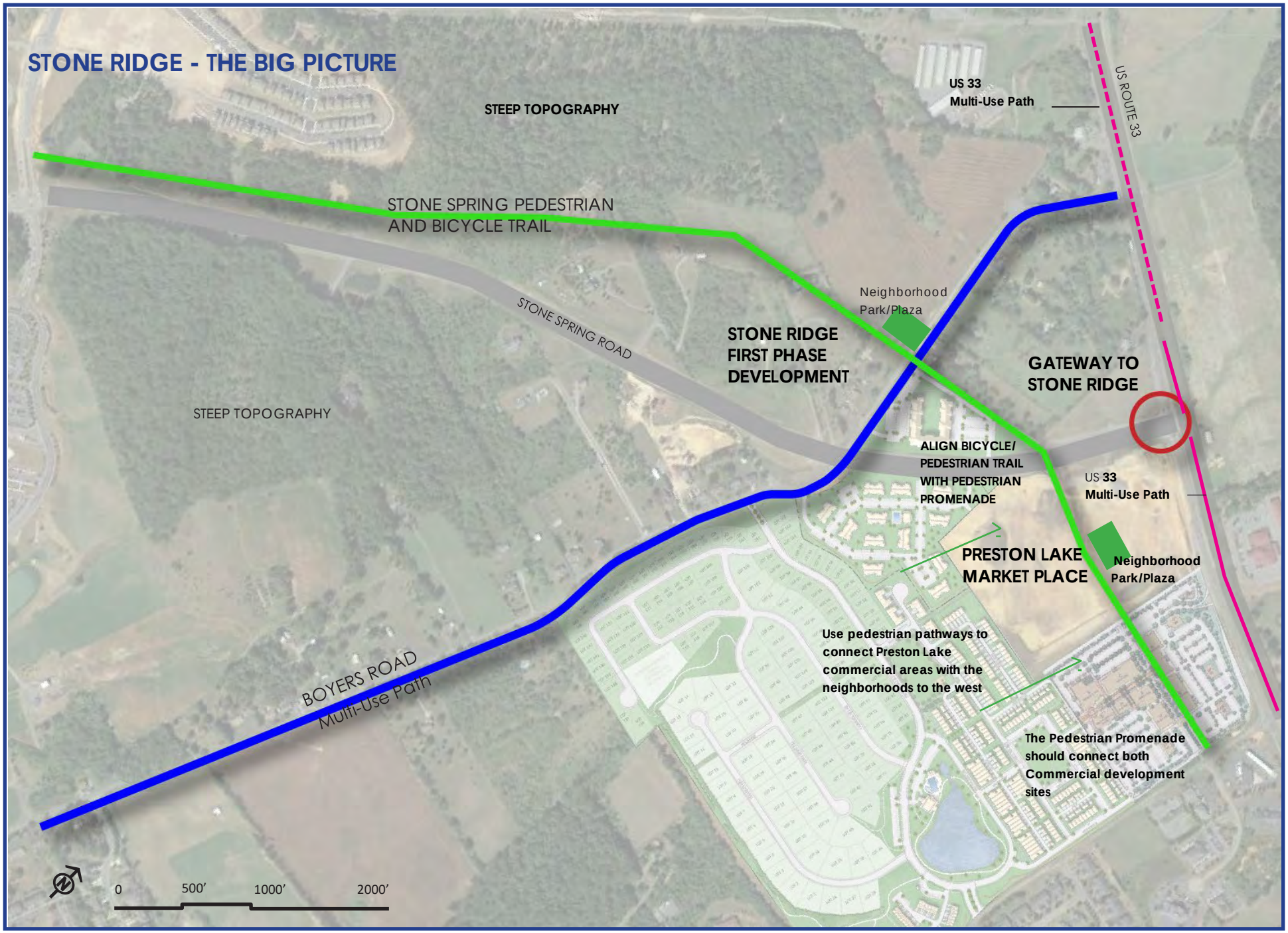
Neighborhood Park with residential beyond

Compact single-family homes with reduced 10- foot setbacks

Compact single-family residential development with reduced setbacks between 15 to 20 feet

# STONE RIDGE FOCUS AREA NEIGHBORHOOD CONCEPTS




STONE RIDGE - THE BIG PICTURE
STEEP TOPOGRAPHY
US 33
Multi-Use Path
US ROUTE 33
STONE SPRING PEDESTRIAN
AND BICYCLE TRAIL
STONE SPRING ROAD
Neighborhood
Park/Plaza
STONE RIDGE
FIRST PHASE
DEVELOPMENT
GATEWAY TO
STONE RIDGE
STEEP TOPOGRAPHY
ALIGN BICYCLE/
PEDESTRIAN TRAIL
WITH PEDESTRIAN
PROMENADE
US 33
Multi-Use Path
PRESTON LAKE
MARKET PLACE
Neighborhood
Park/Plaza
Use pedestrian pathways to
connect Preston Lake
commercial areas with the
neighborhoods to the west
BOYERS ROAD
Multi-Use Path
The Pedestrian Promenade
should connect both
Commercial development
sites
0
500'
1000'
2000'

## STONE RIDGE - CONCEPTUAL FIRST PHASE

Stone Ridge is the northern gateway into the Stone Spring UDA and is defined by the intersection of US 33 and Stone Spring Road. The primary goals for Stone Ridge are to (1) establish a pedestrian friendly street grid in the undeveloped areas that connect to Stone Spring Road and US 33; (2) include a neighborhood park suitable for organized events and with development around it; and (3) connect new development within Stone Ridge to Preston Lake by implementing the Stone Spring Pedestrian and Bicycle Trail.

KEY

1. Neighborhood Park
2. Stone Spring Pedestrian and Bicycle Trail (Trail)
3. Extend the Trail into Preston Lake and Preston Lake Marketplace as a widened sidewalk with trees
4. Create a neighborhood event area or park along the Trail in Preston Lake
5. Place commercial development with Preston Lake along the Trail
6. Improve Boyers Road ROW with striping and continuous sidewalks that connect to US 33 Multi-Use Path. Boyers Road connection to US 33 is right-in/right-out
7. New residential development with structured parking
8. Mixed-use development
9. Townhomes
10. Link Stone Spring Road with the neighborhood park via a pedestrian promenade
11. Commercial frontage
12. Striped pedestrian crosswalks
13. Preston Lake Senior Apartments
14. Landscape design with Stone Ridge district signage
15. Emphasize the corner of US 33 and Stone Spring with buildings that are placed closer to the intersection and are supported with hardscaped plaza, vertical artwork and seating
16. Senior Living Facility


## PRESTON LAKE ENLARGED PLAN - CONCEPTUAL

Improve connectivity between Preston Lake and the adjacent neighborhoods and create a strong street frontage along Stone Spring Road that accommodates pedestrians and improves the first impression of Stone Ridge.

The promenade that links the two commercial properties along US 33 should align and connect to Stone Spring Road as a seamless “main street” pedestrian experience. The promenade should be envisioned as part of the Stone Spring Pedestrian and Bicycle Trail that, at full build-out, would connect with future development north of Stone Spring Road.

A neighborhood park or plaza should anchor the promenade and be capable of sustaining a farmers market and events. Secondary pedestrian walkways orpromenades should connect the commercial area to Preston Lake.

Zoning Ordinance amendments that reduce building setbacks, lot sizes, and parking requirements, and adjust permitted uses for new development will be needed to implement the Neighborhood Center concepts.

Key

*1.* Place buildings closer to the intersection, with landscaping and signage that isintegrated into the design to reinforce the entry into Stone Ridge. *(See Image: Low-wall gateway element)*

*2.* Link the two commercial development sites with a main street pedestrian promenade that continues the Stone Spring Pedestrian and Bicycle Trail. The promenade should include a consistent sidewalk experience with enhanced paving and street trees, supported by commercial development with active uses at the ground floor. *(See Image: Main Street Pedestrian Promenade example)*

*3.* Locate a neighborhood event plaza along the pedestrian promenade. *(See Image: Multi-use Event Center Plaza)*

4. Connect the residential neighborhoods to commercial development with pedestrian paths and trails.

5. Align the pedestrian promenade with commercial development with active ground-floor uses

6. Align sidewalks connecting the commercial development and parking lot areas with the residential neighborhood towards the southwest

7. Create a prominent east-west pedestrian pathway that connects the US-33 Shared-Use Path with the pedestrian promenade and the residential neighborhoods beyond.

8. Create plazas with seating areas, fountains, and other pedestrian amenities along pedestrian promenade. *(See Image: Pedestrian Plaza 3 and 6)*

9. Align development along the US-33 frontage

10. Create a pedestrian crosswalk with refuge island at the intersection of US-33 and Stone Spring Road.


*Image: Low-wall gateway element*

*Image: Multi-use event center plaza*

*Image: Main Street Pedestrian Promenade example*

*Image: Continuous walkway with shade structure and seating*

*Image: Pedestrian Plaza - Water Fountain example*

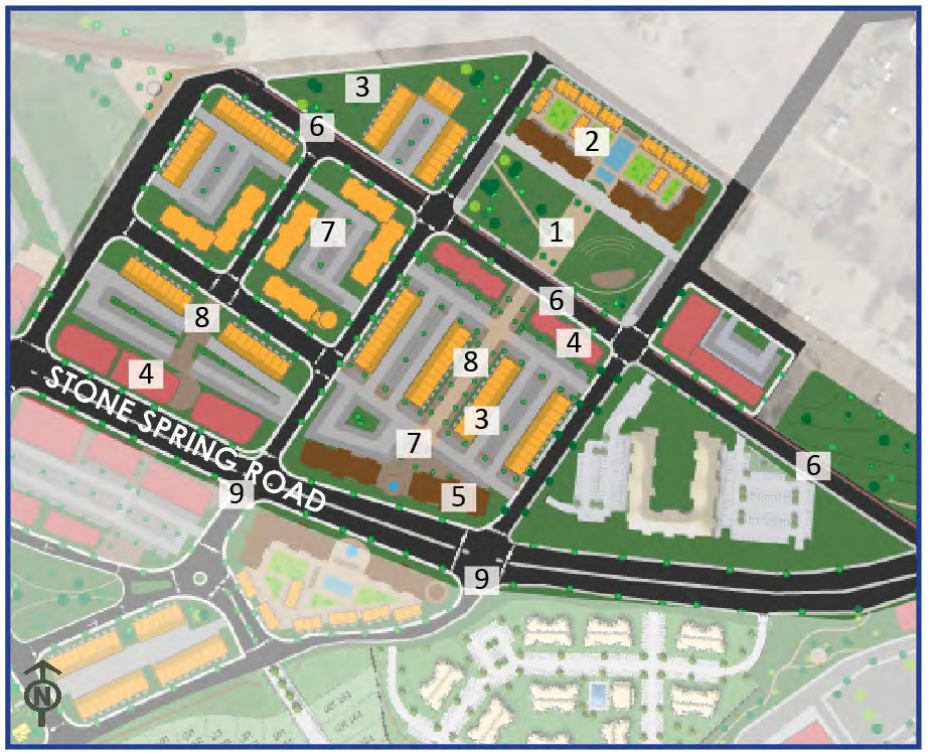
*Image 6: Pedestrian Plaza with seating area*


## FUTURE CONCEPT AT US 33

Future development along US 33 should be placed at the street frontage, with parking located behind the buildings. Intersections should be emphasized with more vertical elements and hardscaped plazas and pedestrian amenities.

KEY

1. Residential development
2. Commercial development
3. Signalized intersection with striped crosswalks
4. Pedestrian walkway and plaza to coordinate with future build-out
5. Building setback and plaza area and Boyers Road focal point
6. Rowhomes
7. Future phase
8. Median with street trees




## FUTURE CONCEPT - NORTH OF STONE SPRING

Future development along Stone Spring Road should reinforce the street frontage while creating pedestrian linkages to the interior blocks and neighborhood park. The Stone Spring Pedestrian and Bicycle Trail should be built as development occurs.

KEY

1. Neighborhood Park
2. Residential development
3. Rowhomes
4. Commercial development
5. Mixed use development
6. Stone Spring Pedestrian and Bicycle Trail
7. Park or plaza area
8. Pedestrian pathway
9. Signalized striped crosswalks


## FUTURE INFILL CONCEPT PHASE

The development of parcels located behind the US-33 and Stone Spring Rd frontage should continue the compact street grid, with buildings placed toward the street frontage. Compact development in these areas should gradually transition to less dense residential development suitable on steeper slopes located toward the interior of Stone Ridge.

KEY

1. Rowhomes
2. Residential apartments
3. Parklets at important street corners
4. Park area buffer between the backside of development at US-33 and development at the interior blocks
5. Median to provide traffic-calming
6. Park area to address change in topography and backside of development from Stone Spring and US-33


## FUTURE CONCEPT - NORTH OF STONE SPRING – SINGLE FAMILY RESIDENTIAL DEVELOPMENT

Single family development could occur towards the interior of Stone Ridge in areas with more steep topography. The blocks would remain compact to facilitate walkability and the edges to this area could be defined with parklets and traffic calming features to define a smooth transition at its eastern edge, adjacent to US-33 and with direct access to the Stone Spring Pedestrian and Bicycle Trail at its western edge.

KEY

1. Single family
2. Traffic calming circle
3. Parklet
4. Stone Spring Pedestrian and Bicycle Trail


## FUTURE CONCEPT SOUTH OF STONE SPRING

Development south of Stone Spring Road would reinforce the commercial and mixed-use corridor but would gradually step down towards Boyers Crossing with compact single-family dwellings and townhouses along Boyers Road.

KEY

1. Neighborhood park *(See Image:- Neighborhood park with residential frontage)*
2. Commercial at Stone Spring Road
3. Compact single-family homes, transition to Boyers Crossing *(See Image:, - Compact single family homes)*
4. Townhouses
5. Mixed-use residential and townhomes. *(See Image: Mixed-use encapsulated parking deck)*
6. New road, extends to Boyers Crossing
7. As development occurs, VDOT will determine the location and format of any connections to public roads.

Image: Neighborhood park with residential frontage


Image: Pedestrian Trail with identification signage.

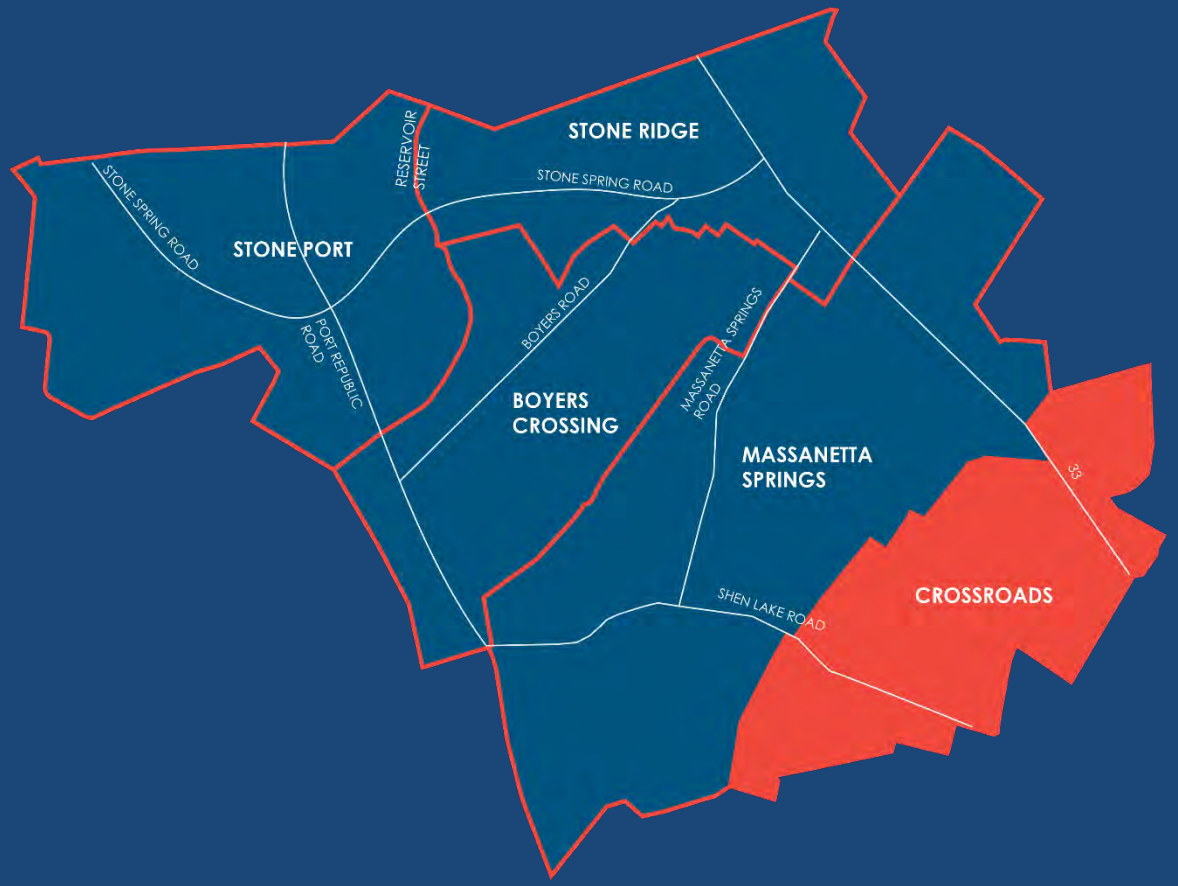
Image: Compact single-family homes - Smaller lots and reduced setbacks


Image: Mixed-use encapsulated parking deck example. 4 levels of residential above commercial. Parking is encapsulated in the podium. (40,000 SF grocery store example)


## STONE RIDGE FULL BUILD-OUT

1. Neighborhood Park
2. Stone Spring Pedestrian and Bicycle Trail
3. New road extension to Boyers Crossing
4. Potential Fire Department location

# CROSSROADS FOCUS AREA NEIGHBORHOOD CONCEPTS




## CROSSROADS - THE BIG IDEAS

Crossroads is defined by the County Park and the undeveloped areas southeast of the intersection of US 33 and Cross Keys Road. The goals for Crossroads include:

(1) Create a distinct southern gateway into the Stone Spring UDA by locating new development closer to the intersection of US 33 at Cross Keys Road, with setbacks to accommodate pedestrian amenities such as a plaza with seating and public art that is highly visible.

(2) Create a transition to the single-family and duplex areas of Crossroads Farm with development that includes townhouses, a library, and neighborhood commercial located at Cross Keys Road and US 33.

(3) Create a safe intersection at US 33 at Cross Keys Road by installing bicycle and pedestrian access, in keeping with the US 33 Arterial Management Plan.

(4) Create a pedestrian trail that links existing and future residential developments to new neighborhood parks.

KEY

1. Crossroads Pedestrian Trail
2. Pedestrian Trail
3. Neighborhood Park
4. Rowhomes
5. Commercial land use emphasis
6. Buildings placed closer to the street frontage
7. Bicycle & pedestrian access to future possible US 33 shared use path
8. Single-family residences
9. Bicycle & pedestrian access
10. Pedestrian pathway to connect the existing neighborhoods to the US 33 Shared Use Path



## CONCEPTS AT CROSS KEYS ROAD, SOUTH-WEST OF US 33

Any additional connections to US 33 and other public roads must comply with VDOT requirements.

KEY

1. Crossroads Pedestrian Trail
2. Neighborhood pathways to connect to the Crossroads Pedestrian Trail
3. Park areas connected to the trail
4. Neighborhood Park
5. Parklet between townhomes
6. Commercial land use emphasis
7. US 33 Shared Use Path to extend to Cross Keys Road
8. Existing commercial development
9. Townhouses
10. Single family
11. Commercial
12. The architectural style of the historic Federalist house at this corner should be reflected in the surrounding commercial architectural design in terms of materials, style, and proportional scale.
13. Right turn in/out

### US-33 AND CROSS KEYS ROAD - ENLARGED PLAN FUTURE CONCEPT AND LATER PHASE

A. Future commercial development (bank is replaced) with intersection emphasis

B. Historic Federalist house maintained - architectural style to be reflected in design of any future development.

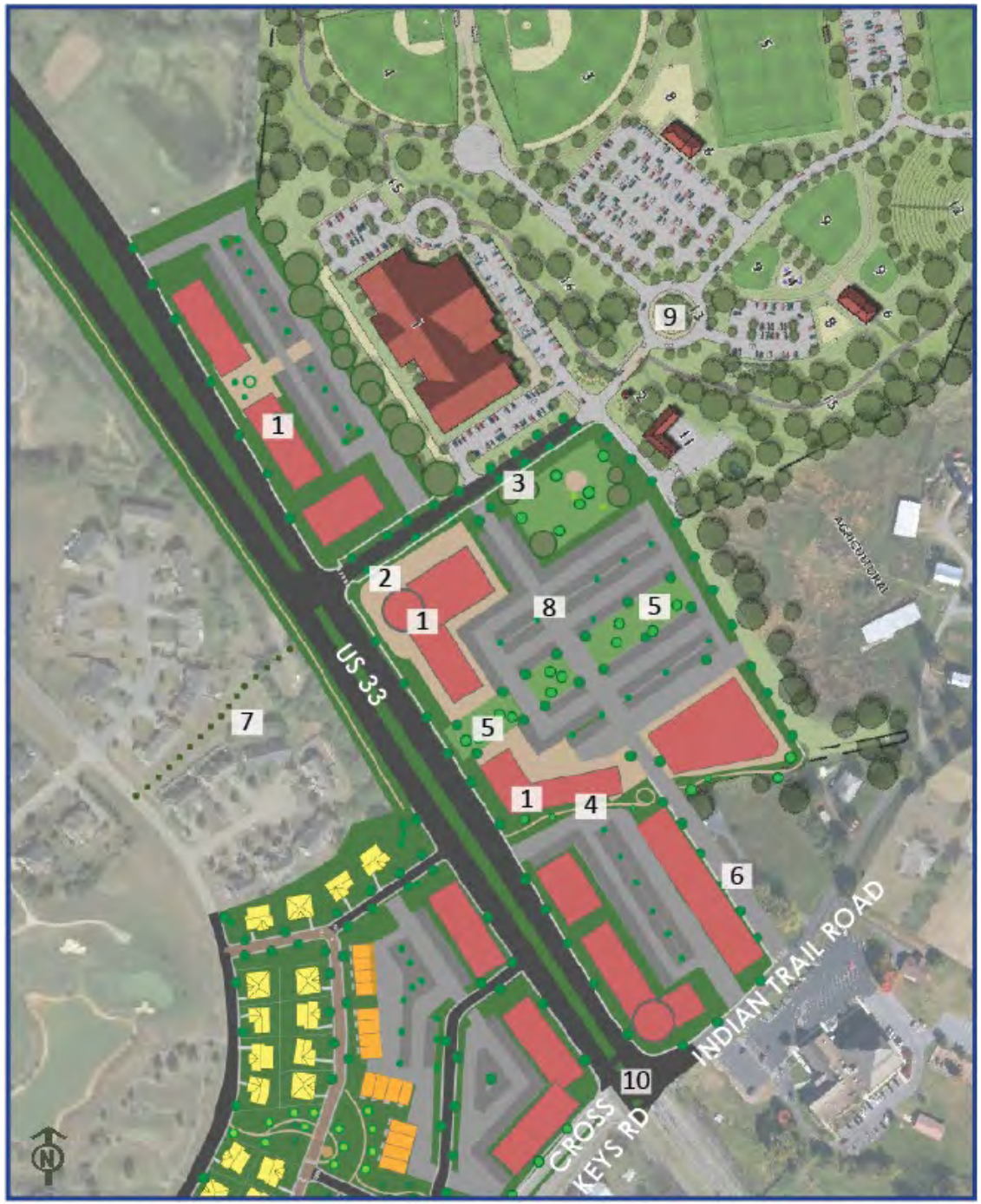

## CONCEPTS AT THE NORTHEAST CORNER OF US 33 AND CROSS KEYS INTERSECTION

The goal for the northeast area of the US 33 and Cross Keys intersection is to create a distinct gateway into the Stone Spring UDA at the intersection of US 33 at Cross Keys Road, with development gradually stepping down in scale and character along Indian Trail Road, transitioning from commercial emphasis to compact townhouses and single-family detached houses that are organized by pedestrian pathways leading to parks and open space. Zoning ordinance amendments that enable development in the Transition Transect to complement the existing and proposed development in the Suburban Transect are essential.

Funded R-Cuts will be constructed at US 33's intersections with Rockingham Park Way and Cross Keys Road.

KEY

1. Commercial frontage along US 33. Reinforce the intersection at Cross Keys Road with buildings placed closer to the street, or with setbacks that have pedestrian amenities (seating, landscaped areas, or public artwork). The architectural style of the historic Federalist house at the southeast corner should also be reflected in the surrounding commercial architectural design in terms of materials, architectural style, and proportional scale. Development in this area could follow at a later phase.
2. Rockingham Park at the Crossroads
3. Neighborhood park
4. Traffic-calming element
5. Parking located behind the building




## CONCEPTS AT COUNTY PARK FRONTAGE

The goals for frontage and entrance to the County's Rockingham Park at the Crossroads (County Park) are:

(1) Create a distinct development frontage along US 33, that celebrates the entrance into the County Park

(2) Create safe pedestrian access along US 33 to the County Park

(3) Construct the funded R-Cut at the intersection of Rockingham Park Way and US 33.

KEY

1. Commercial frontage along US 33
2. Create a distinguished entrance to the County Park by articulating the corner buildings with greater height, placing them closer to the street and/or provide a setback to accommodate a paved pedestrian plaza with seating, art, or visual elements
3. Implement continuous sidewalks along the street entrance to the County Park
4. Connect US 33 with the new east-west streets with pedestrian pathways
5. Create a linear park that organizes the commercial development
6. Create new mid-block streets connecting Rockingham Park Way with Indian Trail Road
7. Connect the neighborhood with US 33 and County Park with a pedestrian pathway
8. Parking located behind the building
9. Rockingham Park at the Crossroads
10. Construct the funded R-Cut at the intersection of Cross Keys Road and US 33

# 6. IMPLEMENTATION AND ACTION PLAN

| PROJECT | TEN GUIDING PRINCIPLES (# correlates to principle) | FUNCTIONAL AREA | TIMEFRAME | REGULATORY SOURCE OR GUIDING DOCUMENT | RESPONSIBILITY |
|---|---|---|---|---|---|
| 1. Adopt the Stone Spring UDA as part of the Comprehensive Plan to formalize the vision for the UDA | All | Establishes a comprehensive vision for the Stone Spring UDA | Long term for the full vision to be realized | 2024 Comprehensive Plan<br>Future amendments described in the Stone Spring UDA Plan | County, VDOT |
| 2. Include civic amenities, such as a library or community center, within each focus area, as needed | 1. A Discernible Center<br><br>10. Prominent Civic and Public Buildings | Establishes a community anchor and framework for new private development | Long Term | Amend Zoning Ordinance Ch. 17, Article VI to allow for civic uses in Stone Spring UDA | County, private sector, non-profit organizations.<br><br>Public-private partnerships |
| 3. Stone Spring Pedestrian and Bicycle Trail | 9. Create neighborhood identity | With each private development, a portion of the Stone Spring Trail will be built | Long Term, built with each new private development<br><br>Short Term amendments to ordinance | Amendment to Bicycle & Pedestrian Plan.<br><br>Amend Zoning Ordinance Ch. 17, Art. VII Development Standards | County amends plan & ordinance.<br><br>Private sector to build and County to pro- mote |
| 4. Boyers Crossing Shared-Use Path | 9. Create neighborhood identity | With each private development a portion of the Boyers Crossing Share-Use Path will be built | Long Term; built with each new private development<br><br>Short Term amendments to ordinance | Comprehensive Plan Amendment<br><br>Amend Bicycle & Pedestrian Plan.<br><br>Amend Zoning Ordinance Ch. 17, Art. VII Development Standards | County amends plan & ordinance.<br><br>Private sector to build and County to promote |

| PROJECT | TEN GUIDING PRINCIPLES (# correlates to principle) | FUNCTIONAL AREA | TIMEFRAME | REGULATORY SOURCE OR GUIDING DOCUMENT | RESPONSIBILITY |
|---|---|---|---|---|---|
| | | | | | |
| 5. Refine the Form- Based Transect with a focus on the height and setback requirements for each of the transect zones in subsequent Plan updates to further the transition from suburban development to more compact development. Use as basis for future code amendments | All | Built form and setback requirements | Short to Mid Term | Comprehensive Plan Amendment<br><br>Amend Zoning Ordinance Ch. 17, Art. VII Development Standards, and Art. VIII Area, Setback, and Height Standards | County amends plan and ordinance. |
| 6. Implement design guidelines related to building and parking placement and the amount of parking on-site | 3. Building placed close to the street to create a sense of place<br><br>Parking placed behind buildings and away from street frontages | Built form and parking requirements | Short to Mid Term | Comprehensive Plan Amendment<br><br>Amend Zoning Ordinance Ch. 17, Art. VII Development Standards | County amends plan and ordinance |

| PROJECT | TEN GUIDING PRINCIPLES (# correlates to principle) | FUNCTIONAL AREA | TIMEFRAME | REGULATORY SOURCE OR GUIDING DOCUMENT | RESPONSIBILITY |
|---|---|---|---|---|---|
| 7. Implement design guidelines related to building form and street design | 5. Complete Streets with a balance among cars, pedestrians. and bicyclists<br><br>9. Create neighborhood identity | Private development and street design | Short to Mid Term | Comprehensive Plan Amendment<br><br>Amend Zoning Ordinance Ch. 17, Art. VII Development Standards | County amends design guidelines<br><br>VDOT to approve street designs |
| 8. Continue to review development proposals for consistency with the Comprehensive Plan, Stone Spring UDA Plan, and County Bicycle and Pedestrian Plan | All | Built form | Short Term | Amend Ch. 17, Art. VII Development Standards and Ch. 17, Art. X Procedures; Sec.17-1005 | County |
| 9. Include a park(s) or multi-use node(s) in each of the Focus Areas and prioritize development around these focal points | 1. A discernible center<br><br>7. Most of the dwelling units are within a 5-minute (1/4 mile) walk to the center | First phase of new development should consider park or green space as part of a first phase | Short and Mid Term | Comprehensive Plan Amendment | Private to build, County to amend ordinance. |

| PROJECT | TEN GUIDING PRINCIPLES (# correlates to principle) | FUNCTIONAL AREA | TIMEFRAME | REGULATORY SOURCE OR GUIDING DOCUMENT | RESPONSIBILITY |
|---|---|---|---|---|---|
| | | | | | |
| 10. Update Rockingham County's typical sidewalk section with Complete Streets Section Diagram | 2. Connected side-walks with a clear pedestrian path, street trees, and lighting<br><br>5. Complete Streets with a balance among cars, pedestrians, and bicyclists | Street and building frontage | Short Term | Amend Zoning Ordinance Ch. 17, Art. VII Development Standards | County amends ordinance. |
| 11. Consider adopting a new Street Classification Plan based on the Street Hierarchy Plan (Page 31) | 6. Create compact street blocks that encourage walking<br><br>9. Create neighbor-hood identity | Improve connectivity between and within the neighborhoods for safe movement of pedestrians, cyclists, and vehicles with specific street descriptions | Long Term | Comprehensive Plan Amendment<br><br>Bicycle & Pedestrian Plan.<br><br>Amend Zoning Ordinance Ch. 17, Art. VII Development Standards | County<br><br>VDOT |

| PROJECT | TEN GUIDING PRINCIPLES (# correlates to principle) | FUNCTIONAL AREA | TIMEFRAME | REGULATORY SOURCE OR GUIDING DOCUMENT | RESPONSIBILITY |
|---|---|---|---|---|---|
| 12. Evaluate the realignment of Albert Long Drive to create a more developable acreage and improved frontage along Albert Long Drive and Reservoir Street | 9. Create neighbor-hood identity | With each private development, a portion of the Stone Spring Trail will be built | Long Term, built with each new private development | Comprehensive Plan Amendment | Private sector VDOT to approve |
| 13. Continue to stay aware of any future expansion needs for emergency services, County government services, and public schools | 10. Prominent civic and public buildings | Public building | Long Term | Comprehensive Plan Amendment | County |
| 14. Locate an appropriate civic amenity, supported by park space, in at least one of the Stone Port Focus Area's mixed use nodes, | 10. Prominent civic and public buildings | Public building | Mid Term | Comprehensive Plan Amendment | County |

| PROJECT | TEN GUIDING PRINCIPLES (# correlates to principle) | FUNCTIONAL AREA | TIMEFRAME | REGULATORY SOURCE OR GUIDING DOCUMENT | RESPONSIBILITY |
|---|---|---|---|---|---|
| 15. Allow for a mix of uses and housing types in each of the focus areas | 8. Greater density that includes a mix of dwelling units and commercial uses | Private development | Short Term | Comprehensive Plan Amendment Land Use<br><br>Amendment to Zoning Ordinance Ch. 17,Art. VI Land Use<br><br>Amend Zoning Ordinance Ch. 17, Art. VII Development Standards | County |
| 16. Use a street grid system in each Focus Area to create more walkable street blocks with pedestrian-scale development | 6. Create compact street blocks that encourage walking | Private development, compact development blocks | Long Term | Comprehensive Plan Amendment<br><br>Amend Zoning Ordinance Ch. 17, Art. VII Development Standards | Private<br><br>County |

# 7. GLOSSARY

**A**

**B**

**Build-To Line** is a line extending through the lot which is generally parallel to the front property line and marks the location from which the vertical plane of the front building elevation must be erected. A minimum percentage of the building must meet the build-to line, thereby creating a uniform building façade line along a street.

**Buffer Zone** is that portion of a sidewalk that is between the pedestrian zone and vehicular zone. Street furniture, signs, and vegetation may occupy the buffer zone, but shall not encroach upon the pedestrian zone.

**C**

**Complete Streets** is a transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient, and comfortable travel and access for users of all ages and abilities, regardless of their mode of transportation.

**Compact Development** is Traditional Neighborhood Design or Development (TND) that efficiently uses public infrastructure. It is located on a compact street grid and is built at a scale that is comfortable for pedestrians and bicyclists.

**D**

**E**

**Elevation** is a drawing that shows the vertical dimensions, features, and appearance of a building or landscape in the context of its scope, scale, and proportions.

Encapsulated Parking. See Parking Deck.

**F**

**Façade** is any exterior wall of a building that faces public spaces, and is subject to additional requirements, such as architectural and height standards.

**Fine-grained development** promotes compact street blocks in close proximity, each with many buildings with narrow frontages, frequent storefronts, and minimal setbacks from the street.

**Form-based transects, or transect zones,** define a series of land uses, with height and setback requirements, that transition from rural areas, to suburban areas, to more densely built transitional areas, to urban neighborhood centers.

**Frontage zone** is that area of a sidewalk between the pedestrian zone and any building or structure. Outdoor display and/or outdoor seating may occupy the frontage zone, but shall not encroach upon the pedestrian zone.

**G**

**Gateways** can be buildings and physical elements, such as landscaping or natural vegetation, that provide visual interest and serve as the primary entry point to a community. Its features help set a unique community identity.

**Greenfield** relates to or denotes previously undeveloped sites for future commercial or residential development.

**H**

**I**

**Interconnected Streets** is the organization of streets and blocks that integrates boulevards, avenues, neighborhood streets, and alleys into an interconnected grid, and links to pedestrian and other motorized

and non-motorized transportation systems; building frontages defining street walls that help to create outdoor rooms in the streetscape; street vistas that terminate with public space, landmark structures, or civic buildings. Topography must be considered in the design of all street systems.

**J**

**K**

**L**

**Lot Coverage** is the maximum area of a lot that may be occupied by a structure. Lot coverage is expressed as a ratio. Arcades, open porches, decks, terraces, and stoops are excluded from the calculation.

**M**

**Mixed Uses** combines residential, commercial, civic, recreational, and open space uses in a diversified but seamless arrangement; also combines first-floor retail with upper-floor apartments and/or offices.

**Mixed-use Nodes** are central or connecting points in a neighborhood that have a mix of residential, commercial, and institutional buildings, such as shopping areas, community centers, libraries, and medium- to high-density housing.

**Multi-Use Path** is a form of infrastructure that supports multiple recreation and transportation opportunities, such as walking, bicycling, inline skating, and people in wheelchairs. Also known as shared-use path or multi-purpose trail.

**N**

**Neighborhood Identity** is a character that is promoted by a consistent hierarchy of style of materials and finishes, that include gateway signs, monuments, and street furnishings.

**O**

**On-Street/Parallel Parking** supports local businesses and provides separation between moving traffic and pedestrians, and pro- motes effective traffic-calming by slowing the speed of vehicles.

**P**

**Parking Deck** is a specialized building type dedicated to the accommodation of parking in quantity by vertical stacking. Also referred to as encapsulated parking.

**Pedestrian Environment** is street-level space that is enhanced by the design of buildings which provide windows and entrances at street level and sidewalks with shade trees and street furniture.

**Pedestrian Zone** is that portion of a sidewalk that provides a clear, unencumbered path for the movement of pedestrian traffic.

**Plaza** is a public square, open marketplace, or similar open space.

**Porch/Portico/Colonnade** serves as a transition element from the private realm of the building to the public realm of the sidewalk and street; provides shade; promotes a finer, more ornamental texture to the building; creates a cozy space to sit, walk, relax; provides the outdoor room for greeting and socializing with neighbors and friends.

**Promenade** is a paved public walkway that may include landscaping, trees, seating, and lighting, and connects to parks, open space, and neighborhood centers.

## Q

## R

**R-Cut** is a Restricted Crossing U-Turn (R-Cut) used to reduce vehicular conflicts at intersections primarily on four-lane divided highways. Side street left-turn and through-vehicles turn right and make a U-turn at a dedicated downstream median opening to complete the desired movement.

## S

**Sidewalks** serve to link uses, buildings, lots, and streets together; accommodate a healthy pedestrian circulation network; provide close-to-home opportunities for exercise; enhance wayfinding; and an appreciation of the neighborhood/place.

**Setback** is the area of a lot measured from the lot line to a building Facade or Elevation.

**Setback, Front** is the distance between a Frontage Line and a facade. This distance is given as a minimum or as a requirement (a build-to line).

**Setback, Side** is the distance between the side lot line and an exterior wall of the building, with the exception of roof overhangs.

**Street wall** is the front façade(s) of a building where it is built on or close to the street. It is an important urban design element because it defines the public realm.

**Streetscape:** the assemblage of landscape, sidewalks, street trees, street-lights, and curbs between the Lot Line and the vehicular lanes. The streetscape, in combination with the building frontage and the vehicular way comprises the urban public realm, which may include both public and private realms.

**Sustainability** is TND based on a development plan that encompasses environmental, land use, and market support for the long-term viability of the plan.

**T**

**Traditional Neighborhood Development or Design (TND)** is a form of compact development that includes a range of housing types, a network of well-connected streets and blocks, and a variety of public spaces, and should have amenities such as stores and schools within walking distance of residences.

**Traffic Calming** is a set of techniques or measures that serve to reduce the speed of traffic. Such strategies include lane-narrowing, on-street parking, chicanes, yield points, sidewalk bump-outs, speed bumps, surface variations, midblock deflections, and visual clues.

**U**

**V**

**W**

**Walkable Service Area** features a ¼ to ½ mile (5 to 10-minute walk) radius from any point in the neighborhood to goods and services.

**Walkway** is a passage or path for walking along, especially a raised passageway connecting different sections of a building or a wide path in a park or garden.

**X**

**Y**

**Yard** is the portions of a lot which, following the prescriptions of the urban regulations, remain free of structures, except that porches, terraces, and decks may be specifically permitted to encroach upon them.

**Z**