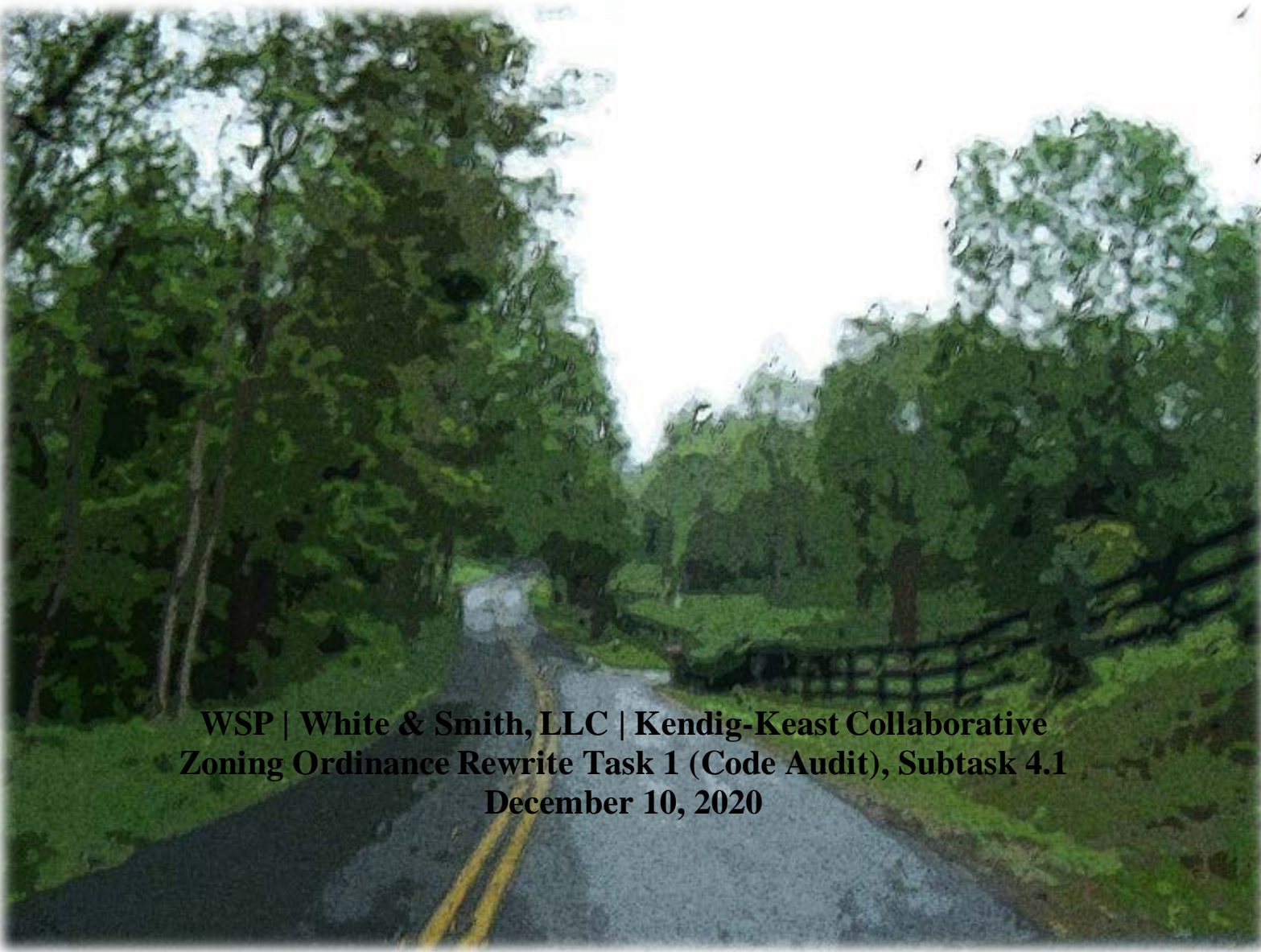


Zoning Text Analysis



**WSP | White & Smith, LLC | Kendig-Keast Collaborative
Zoning Ordinance Rewrite Task 1 (Code Audit), Subtask 4.1
December 10, 2020**

Loudoun County Zoning Ordinance Rewrite | Zoning Text Analysis

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Loudoun County recently adopted a new [*Loudoun County 2019 General Plan*](#) (2019 GP) and is updating its Revised 1993 Loudoun County Zoning Ordinance (“Revised 1993 Zoning Ordinance”) to implement those long-range planning policies; modernize its zoning regulation; and to improve its usability and workability for the general public, applicants, and decision-makers. Loudoun County has retained a consultant team led by WSP to assist the County’s staff in updating their zoning regulations.

Loudoun County is unique in that it is a jurisdiction where there are three separate zoning ordinances that could be applicable. These include:

1. The Revised 1993 Zoning Ordinance, which is the currently effective countywide zoning ordinance;
2. The 1993 Loudoun County Zoning Ordinance, which was in effect prior to the adoption of the Revised 1993 Zoning Ordinance; and
3. The 1972 Loudoun County Zoning Ordinance.

The County currently maintains the 1993 and 1972 Zoning Ordinances due to the Route 28 Highway Transportation Improvement District legislation, which prohibits the County from unilaterally downzoning property in the Tax District until 2037 (Code of Virginia § 15.2-4603). This project will replace the Revised 1993 Zoning Ordinance with a new zoning ordinance. Therefore, this report principally addresses the Revised 1993 Zoning Ordinance. A separate task will focus on how to address the County’s multiple zoning ordinances so that it would no longer maintain the 1972, 1993, and Revised 1993 Zoning Ordinances. (Task 4, Subtask 1)).

This project is broken into several tasks and subtasks, including:

- a code audit (Task 1),
- initiation of a cloud-based zoning ordinance using the state-of-the-art enCodePlus software (Task 2),
- best practices for ordinance unification of the County’s three zoning ordinances, along with updated planned development regulations and incentives (Task 4),
- sign regulations (Task 5), and
- parking regulations (Task 6).

The Consultant Team has completed several portions of the Task 1 along with a public-facing enCodePlus portal. The following items are completed for Task 1:

- Zoning 2021 Task 1 (Code Audit), Subtask 1 (Project Orientation) Deliverables (March 27, 2020) documented items related to document review, data needs, document observations, internal communication, meeting notes, and timelines along with its March 12, 2020 kickoff meeting with County staff.
- Zoning Ordinance (ZO) Rewrite Task 1 (Code Audit), Subtask 2 (Related County Code provisions and their relationship to ZO Rewrite) (April 23, 2020) documents provisions in the Codified Ordinances (County Code) that relate either directly or indirectly to the Revised 1993 Zoning Ordinance (and district or design guidelines).
- The “Summary of Land Use-Related Goals in Existing Policies, Strategies and Actions” (May 2020)(Subtask 3.1) summarizes the policies of the 2019 GP, *2019 Countywide Transportation Plan* (2019 CTP), Comprehensive Plan for the Town of Hamilton, Round Hill Area Management Plan, Waterford Area Management Plan, Strategic Land Use Plan for Telecommunication Facilities, Loudoun County Heritage Preservation Plan, and Route 50 Corridor Design Guidelines as they relate to the Revised 1993 Zoning Ordinance Rewrite.
- A report on “Proffers, Variances, and Zoning Amendments” (April 13, 2020) summarizes planning and development items approved and denied from 2015 to 2020 (first quarter); Proffers, Zoning Conversions in the Route 28 Taxing District (ZRTD), Zoning Ordinance Modification (ZMOD), Zoning Map Amendment (Rezoning) (ZMAP), Zoning Concept Plan Amendment (ZCPA), Minor Special Exception (SPMI), Sign Development Plan (SIDP), and Special Exception (SPEX) applications, in support of this subtask.
- Kendig-Keast prepared a composite GIS map, Loudoun County Adopted Policy Review, Land Use-Related Goals (by Policy Areas) that identifies plan recommendations warranting review in the context of drafting the new zoning ordinance (Subtask 3.2).
- Kendig-Keast prepared a GIS map and written recommendations (Loudoun County, VA Policy Areas/Place Types, Zoning Districts Discrepancies Analysis) that analyze the zoning map for the patterns of districts and character types, discrepancies between the zoning map and the policy area Place Types, and the presence of mapped and unmapped districts and identify opportunities for district consolidation (Subtask 4.3).

The County recently appointed a Zoning Ordinance Committee (ZOC) as an advisory committee reporting to the Planning Commission that will review and recommend changes to the Revised 1993 Zoning Ordinance pursuant to Virginia Code §15.2-1411, and further serve as a sounding board for staff during development of the new zoning ordinance (see [October 6, 2020 Board Business Meeting Report](#)). In addition, County staff met with Board of Supervisors, advisory bodies, various departments, and community and professional groups compiled a list of over 921 comments to the Revised 1993 Zoning Ordinance. A web page is established for the [Zoning Rewrite](#).

This report focuses on Task 1 (Code Audit) and provides an analysis of the text of the Revised 1993 Zoning Ordinance. Part I discusses the Revised 1993 Zoning Ordinance, along with the 2019 GP (adopted in 2019). Part II discusses a new framework for organizing and codifying the zoning ordinance. Part III provides a framework for new zoning districts that implement the 2019 GP. Part IV discusses development standards that – along with the zoning district standards – shape the County’s form and character. Part V discusses the regulation of uses, including a framework for providing a comprehensive and coherent arrangement of uses and additional regulations for specific uses. Finally, Part VI discusses zoning processes, including more effective ways to codify and to administer the County’s zoning regulations.

Following this analysis, the Consultant Team will prepare an Annotated Outline and Legal Analysis. Task 4 will explore an approach to unifying the existing three (3) zoning ordinances into a single ordinance, along with approaches to planned development and incentives. Task 5 of this project will revise the sign regulations, and Task 6 will revise the parking regulations.

I. Introduction

Loudoun County's first zoning ordinance was adopted in 1942, at a time when the County's population was 20,291 with 5,219 housing units.¹ This zoning ordinance was less than five pages long, with five zoning districts, two permitting processes (a zoning permit and a use permit from the Board of Supervisors for any heavy industrial use), and 14 definitions.² The County's population has now expanded twenty-fold to 412,864 as of 2019, with the Revised 1993 Zoning Ordinance expanding the regulations 200-fold and now encompassing over 1,003 pages, with a 28-page table of contents, 61 pages of definitions, 14 processes, and 61 districts (not counting historic districts).

The 1972 Zoning Ordinance has 19 districts in four (4) categories: Residential, Commercial/Office, Industrial, and Special. One of these districts ((PD-AI) Planned Development-Airport Industrial) was later rezoned to two of the other districts (PD-IP (Planned Development-Industrial Park) and PD-GI (Planned Development-General Industry)), and PD-RDP (Planned Development-Research & Development Park) was added later, along with two additional Special districts (Mountainside Development Overlay District (MDOD) and Highway Corridor Protection). Ten of these districts (three of the Residential, three of the Commercial/Office, and four Industrial) were planned development districts, which required a negotiated rezoning process.

The 1993 Zoning Ordinance reorganized the districts into Rural and Urban (instead of Residential and Commercial/Office) and expanded the Special and Overlay districts, moving the planned development districts into that category. This included 37 total districts (not counting historic districts), with nine rural, 10 urban, 14 planned and four environmental impact districts.

The Revised 1993 Zoning Ordinance reclassified the Rural category as "Non-Suburban," and established the Joint Land Management Area (JLMA), Transition, and Suburban categories. There are 61 districts, including nine Rural, four JLMA, seven Transition, 10 Suburban, and 19 Planned Districts. The Special and Overlay district categories were expanded, with the number of Planned Development districts increasing to 19 and Environmental Impact districts expanding to seven (this includes the QN Quarry Notification, LOD Limestone, and VC Village Conservation Overlay Districts). The original ordinance was adopted on June 16, 1993 and has been amended 89 times.

The Revised 1993 Zoning Ordinance applies only to the County's unincorporated area, and not to its seven incorporated towns ([Hamilton, Hillsboro, Leesburg, Lovettsville, Middleburg, Purcellville and Round Hill](#)). The County and the Towns of Hamilton, Leesburg, Purcellville, and Round Hill cooperate in planning and development review in the Town Joint Land Management Areas (JLMAs). Historically, the JLMAs provide an urban growth boundary where the Towns set limits to extend water and sewer facilities, with the *2019 GP* encouraging the annexation of development when water and sewer extend into a JLMA in accordance with annexation guidelines.³

¹ Loudoun County Department of Planning and Zoning, Loudoun County Population: Decennial Census and Loudoun County Housing Units: 2017 Estimate Series, at <https://www.loudoun.gov/1913/Demographic-Estimates-Forecasts>.

² Loudoun County Department of Planning and Zoning, Historical Planning Documents, at

³ Loudoun County 2019 GP (June 20, 2019), at 1-6, 2-118 & Strategy 1.2.D; Loudoun County General Plan (amended through October 16, 2007), Chapter Two: Planning Approach). The 2019 GP now treats the Leesburg JLMA different from other JLMAs with respect to town utility expansion (See Chapter 2, Towns and JLMAs, Town Strategy 2.1).

Table 1. Zoning Districts (Revised 1993 Zoning Ordinance)

		No.			No.
Non-Suburban					20
Rural		9	Transition		7
AR-1	Agricultural Rural-1		TR-10	Transitional Residential - 10	
AR-2	Agricultural Rural-2		TR-3 UBF	Transitional Residential - 3	
A-10	Agriculture		TR-3 LBR	Transitional Residential - 3	
A-3	Agricultural Residential		TR-3 LF	Transitional Residential - 3	
CR-1	Countryside Residential-1		TR-2	Transitional Residential - 2	
CR-2	Countryside Residential-2		TR-1 UBF	Transitional Residential - 1	
CR-3	Countryside Residential-3		TR-1 LF	Transitional Residential - 1	
CR-4	Countryside Residential-4				
RC	Rural Commercial		Suburban		10
Joint Land Management Area (JLMA)		4	R-1	Single Family Residential	
JLMA-1	Joint Land Management Area-1		R-2	Single Family Residential	
JLMA-2	Joint Land Management Area-2		R-3	Single Family Residential	
JLMA-3	Joint Land Management Area-3		R-4	Single Family Residential	
JLMA-20	Joint Land Management Area-20		R-8	Single Family Residential	
			R-16	Townhouse/Multifamily Residential	
			R-24	Multifamily	
			GB	General Business	
			CLI	Commercial Light Industry	
			MR-HI	Mineral Resources – Heavy Industry	
Special & Overlay					30
Planned District		19	Environmental Impact (overlay districts)		6
PD-H3	-Housing		AIOD	Airport Impact	
PD-H4	-Housing		FOD	Floodplain	
PD-H6	-Housing		MDOD	Mountainside Development	
PD-CC(NC)	-Commercial Center (Neighborhood Center)		TI	Transportation Impact (Reserved)	
PD-CC(CC)	-Commercial Center (Community Center)		QN	Quarry Notification	
PD-CC(SC)	-Commercial Center (Small Regional Center)		LOD	Limestone	
PD-CC(RC)	-Commercial Center (Regional Center)				
PD-OP	-Office Park		Other		5
PD-RDP	-Research & Development Park		VCOD	Village Conservation Overlay District	
PD-IP	-Industrial Park		Route 28:		
PD-GI	-General Industry		CO	Corridor Office Optional Overlay	
PD-SA	-Special Activity		PD-CM*	Corridor Mixed-Use Planned Development	
PD-TC	-Town Center		CB	Corridor Business Optional Overlay	
PD-CV*	-Countryside Village		CI	Corridor Industrial Optional Overlay	
PD-TREC*	-Transit Related Employment Center				
PD-TRC	-Transit Related Center				
PD-RV	-Rural Village				
PD-AAAR	-Active Adult/Age Restricted				
PD-MUB	-Mixed Use Business				
Historic					4
HS	Historic Site		HR	Historic Roadway	
HCC	Historic and Cultural Conservation		HAC	Historic Access Corridor	
Total	64				

* Not mapped or applied.

The County adopted a new *Loudoun County 2019 Comprehensive Plan* in 2019, which includes both the 2019 GP and the 2019 CTP, both dated June 20, 2019. The 2019 GP has the most direct relationship to the Zoning Ordinance Rewrite, although the *Countywide Transportation Plan* includes land use and density policies to support transit, along with a Roadway Design Toolkit that is important to placemaking. The 2019 GP replaces the 2001 General Plan and continues in effect three broad geographic policy areas: the Suburban Policy Area (SPA), the Rural Policy Area (RPA) including the JLMAs and Existing Villages, and the Transition Policy Area (TPA), and adds a new Urban Policy Area (UPA). While it replaces most of the County's existing area plans, several plans will continue in effect⁴

⁴ These include the Comprehensive Plan for the Town of Hamilton (2003), the Round Hill Area Management Plan (1990, as amended), and the Waterford Area Management Plan (1987). The Heritage Preservation Plan (2003, as amended), Route 50 Corridor Design Guidelines (2007), and Strategic Land Use Plan for Telecommunication Facilities (1996).

The plan also adds the “Place Type” concept to describe the County’s preferred development outcomes in each policy area above and beyond use and dimensional guidelines. These include land use and preferred development patterns, streetscapes, and design features that make places and environments visually and functionally distinctive. The Place Types are not zoning districts, but instead describe complete communities that would occur within them. The plan states the following connection between zoning and the Place Types: “[t]he Place Types in the General Plan are: ... [l]inked to future comprehensive Zoning Ordinance revision, which will create enhanced design standards and may include new districts that better align with the desired character of the place” (2019 GP, at 2-9 to 2-11). The Place Types include the following elements (2019 GP, at 2-9):

- Uses, including retail and service interior to neighborhoods and communities, or retail and service that supports employment uses.
- Preferred Mix of Uses
- Street Patterns
- Block length
- Setbacks
- Parking
- Design amenities
- Open and civic spaces
- Intensity (floor area ratio [FAR] or residential density)
- Building Height
- Transitions between different Place Types and uses that minimize the need for intrusive screening or other structural mitigation

The planning areas and Place Types are summarized in Table 2.

Table 2. Planning Areas and Place Types

Policy Area	Land Area	Description	Place Types
Urban (UPA)	2,600 acres	<ul style="list-style-type: none"> • Located around the Silver Line Metrorail Stations (Loudoun Gateway & Ashburn). • Mixed-use/transit-oriented development that accommodates living, working, shopping, and playing in a dense urban environment, creating complete communities that serve as centers of activity. 	<ul style="list-style-type: none"> • Urban Transit Center • Urban Mixed Use • Urban Employment
Suburban (SPA)	48,000 acres	<ul style="list-style-type: none"> • Mostly single-family and built out. • Includes Route 28 and Loudoun County Parkway (Route 607) • Focus on infill, redevelopment, and adaptive reuse 	<ul style="list-style-type: none"> • Suburban Neighborhood • Suburban Compact Neighborhood • Suburban Mixed Use • Suburban Commercial • Suburban Employment • Suburban Industrial/Mineral Extraction
Transition (TPA)	24,000 acres	<ul style="list-style-type: none"> • Edge of SPA • Large-lot and clustered residential uses with limited commercial • Visually distinct • Substantial open space within the context of an assortment of community designs • Accommodates additional housing to address County demand. 	<ul style="list-style-type: none"> • Transition Large Lot Neighborhoods • Transition Small Lot Neighborhoods • Transition Compact Neighborhoods • Transition Community Centers • Transition Light Industrial • Transition Industrial/Mineral Extraction
Rural (RPA)	230,000 acres	<ul style="list-style-type: none"> • 12 Rural Historic Villages • Rural landscape of working agricultural lands, rural economy uses, and limited residential • Farmland; natural, environmental, and heritage resources; open space; and vistas 	<ul style="list-style-type: none"> • Rural North • Rural South • Rural Historic Villages

The “Summary of Land Use-Related Goals in Existing Policies, Strategies and Actions” (May 2020) provided for Subtask 3.1 summarizes 2019 GP policies. While the document is extensive, a brief overview of the policies includes:

- Consider design standards that implement design guidelines that encourage vibrant areas and a sense of place, including streetscaping (2019 GP QD Policies 1, 5-7)
- Design guidelines that support a compact, walkable development pattern in areas that are appropriate for pedestrian activity (2019 GP QD Policy 2)
- Consider design standards for bike lanes, shared spaces, paths of travel, and traffic calming (2019 GP QD Policy 4)
- Specific policies to measure residential density, FAR, and use mix (with flexibility for developments in the UPA of less than 5 acres and SPA of less than 20 acres that add to the overall use mix) (2019 GP QD Policy 7)
- Implement Universal Design Principles (2019 GP QD Policy 8)
- Encourage adaptive reuse (2019 GP IR Policy 2)
- Compatible building and street design to ensure quality development in the Rural Historic Villages (2019 GP RHV Policy 1)
- Various land use and density policies in the JLMAs
- Establish buffers for River and Stream Corridor Resources (RSCR) and standards for groundwater/wells, limestone, agricultural land, steep slopes, mountainside and ridgeline protection, historic/archaeological resources, cultural landscapes, plant and wildlife habitats, air quality, aural environment, and lighting/night skies (2019 GP NEHR Policy 1, RSCR Policy 2, SGR Policy 3, HASR Policy 5, NHR Policy 6, CE Policy 7)
- Encourage sustainable development and green building practices, along with zoning and permitting best practices that address renewable energy generating sources (solar and wind) (2019 GP SUS Policy 9, FMPI Policy 6)
- Address rising housing costs with a continuum of housing with flexible standards, density bonuses, form-based standards that encourage “middle housing,” and related tools (2019 GP Housing Policies 1 and 2)
- Establish and maintain desirable levels of publicly accessible open space through a variety of tools, including establishing regulatory protection mechanisms, such as a minimum percent of open space preservation in new developments; linking reductions in on-site open space with cash in lieu of dedication; and crediting more usable, desirable, and environmentally significant off-site open space toward onsite dedication requirements (2019 GP FPMI Policy 3)
- Address access to wireless communications (2019 GP MPI Policy 7)
- Protect the State Historic District and National Historic Landmark in the Waterford area (Waterford Area Management Plan)
- Minimize the need for new telecommunications towers and monopoles and encourage taller structures in areas planned and zoned for industrial and employment and 750 feet from residential districts (Strategic Land Use Plan for Telecommunication Facilities).
- Minimize impacts on the natural and/or cultural setting of unique geological resources and protect historic resources (Loudoun County Heritage Preservation Plan)
- Implement the building orientation, building design, parking location, service area screening, and related policies along the Route 50 Corridor (Route 50 Corridor Design Guidelines)

II. Zoning Ordinance Structure

Approach

This project's goal is to bring Loudoun County's zoning regulations into the 21st Century. The following goals should guide the Zoning Ordinance Rewrite:

1. **Provide a Comprehensive Framework for Development.** Loudoun County covers a range of urban, suburban, and rural settings. It is a diverse community with environments ranging from historic villages and emerging urban centers to prime farmland and rural landscapes. The zoning ordinance must cover all development contexts in a way that is appropriate to their neighborhood, market, and environmental settings. A one-size-fits all approach will not work.
2. **Ensure that the Zoning Ordinance is User-Friendly.** The zoning ordinance should be easy to use for the public, applicants, and administrators. Information should be logically arranged, easy to find, and with language and graphics that are attractive and clear.
3. **The Zoning Ordinance Should have Community Support.** A zoning ordinance is not just a document – it is a process. It should reflect the input of a broad range of stakeholders – from neighborhoods to the development and business community. This will ensure that its processes and metrics are understood and will give it sustainable, long-term support.
4. **The Zoning Ordinance Should Make the Right Things Easy.** Development that reflects the long-term planning policies of the 2019 GP and other plans adopted by the County should have a streamlined approval process. Standards that pose a barrier to redevelopment and blight removal should be revised or eliminated.
5. **The Code should Reflect Best Practices.** The current zoning ordinance blends conventional zoning districts with a negotiated design control (planned development) and a patchwork of updates. The new zoning ordinance should deliver a comprehensive approach to Loudoun County's zoning, design, and development objectives that is integrated with other key development controls (such as the *Facilities Standards Manual* (FSM)). It should provide the tools for redevelopment, mixed use corridors, and sustainability available in modern approaches such as form-based codes – but with a language, metrics, and processes that are easy to use. In addition, there are elements of conventional zoning that remain viable – such as sensible use regulations that protect neighborhoods and landscaping in suburban contexts. The zoning ordinance should reflect best practices but avoid making unnecessary changes simply to be trendy.
6. **Optimize Standards and Procedures.** The zoning ordinance should not over- or under-deliver. Loudoun County expects a given level of design and the zoning standards should ensure that development reflects those expectations. However, the standards should reflect the needs and market conditions of Loudoun County rather than national trends or fads.
7. **The Zoning Ordinance Should Balance Flexibility and Certainty.** To accomplish the long-range planning objectives for design, amenities, resource protection, and contributions to infrastructure, Loudoun County has historically relied on discretionary review. Nearly half of the County's zoning districts are planned development districts which tie discretionary review to a higher level of design than the base suburban and non-suburban districts. This gives the County the opportunity for case-by-case review but requires an inherently unpredictable legislative rezoning process. While options such as form-based codes tie community design to precise standards, excessively tight standards can discourage design creativity and preferred development patterns. An example is the Route 28 districts, which offer optional regulatory concessions and precise development standards but attracted little interest from applicants. The new zoning ordinance should balance the benefits of clear, objective standards with common sense flexibility that preserves plan consistency. For example, if the zoning regulations require a given number of parking spaces, but the land area required to provide the parking would displace valuable environmental or heritage

resources, the zoning ordinance could authorize planning staff to reduce the number of required spaces to a given level. This would reflect a policy that resource preservation outweighs the need to require businesses to park every car during peak demand periods.

8. **Provide a Clear and Fluid Administrative Process.** The new zoning ordinance should provide entitlement processes that are efficient, expand opportunities for administrative review, and coordinated with proposed changes to the structure of the zoning ordinance.
9. **Avoid Nonconformities.** Any substantive change to the zoning district or development standards will likely create nonconformities. The new zoning ordinance should incorporate regulations that minimize nonconformities with standards that reflect the best aspects of current development patterns and eliminate unnecessary and outdated standards. To minimize variance requests, potentially avoid litigation, and improve public support for the zoning ordinance, the update will also include standards to process existing nonconformities or recognize the legality of minor or beneficial deviations from the new development zoning ordinance.
10. **Provide Enforcement Tools.** At its core, a zoning ordinance is a legal document. It provides Loudoun County the authority to regulate and condition development. However, it must be enforceable to serve its intended purpose. The update will include tools to improve enforceability, including reporting requirements, compliance plans, and improved notification procedures that align with Virginia land use law.

The “Zoning Ordinance Structure” refers to the approach or approaches to regulating development. Several different approaches to zoning are commonly used by communities throughout the United States. They typically are categorized as either conventional or alternative approaches.

Conventional Zoning Ordinance Structures

The oldest and most basic conventional zoning ordinance structure is use-based (also known as “Euclidean”) zoning. This zoning ordinance structure divides the community into districts where different uses are allowed, and different setbacks, building height, lot coverage, and other metrics apply. Thirty of Loudoun County’s 49 districts are conventionally zoned and cover approximately 85 percent of Loudoun County’s territory.

The second category of conventional zoning ordinance structures is “planned” districts. Based on the “planned unit development” concept, these districts theoretically allow design flexibility in exchange for conditions applied as part of the rezoning process. Over 14 percent of Loudoun County’s territory falls within a planned district. This allows an applicant to negotiate a master planned development and gives the County case-by-case review. However, approaches that codify the conditions that are typically negotiated through PD approval, coupled with administrative approval, could streamline the process, and allow developers to devote more of their budget to improving design rather than permitting costs. On the other hand, the rezoning process allows the County to receive proffers that address the impacts development through capital intensity factor (CIF) contributions (for residential development), transportation improvements, and other commitments (such as land for public uses). A middle ground approach could apply new zoning categories through voluntary rezonings, while codifying building or site design factors that are otherwise negotiated as part of the rezoning.

Alternative Zoning Ordinance Structures

As the practice of zoning has evolved, planners have devised alternatives to the traditional use-based and planned district zoning ordinance structures. These alternative approaches or alternative zoning ordinance structures respond to the shortfalls of conventional zoning. The alternative approaches provide specific standards to ensure outcomes not addressed or controlled by conventional zoning or guaranteed through a negotiated planned development process. These alternative approaches to zoning ordinance structure include more design or form-based requirements. They include specific metrics to address the environmental impacts of development, and site and building design standards that shape the form and function of new development. Examples include performance zoning, use patterns, form-based codes, as well as “hybrid” approaches such as composite zoning that combine elements of conventional zoning and/or other approaches to zoning.

Performance Zoning. Performance zoning regulates land-use intensity through a series of ratios or other numeric standards rather than by minimum lot size and setbacks. These metrics are more precise than conventional zoning, incorporating things like minimum percentages of landscaping or livability space and maximum impervious cover to minimize a development impact on environmental resources and to achieve use compatibility. Kendig et al., *Performance Zoning* (American Planning Association, 1980). Modern forms of performance zoning have moved beyond land cover, landscaping, and environmental metrics to incorporate design standards that address a variety of urban, rural, auto-urban, suburban, estate, countryside, and agricultural character types. Kendig, *Using the New Performance Zoning* (2019); Kendig & Keast, *Community Character: Principles for Design and Planning* (Island Press 2010); Kendig & Keast, *A Guide to Planning for Community Character* (Island Press 2011).

Use Patterns. “Use patterns” create design typologies that blend use, dimensional, and development standards into a unified whole. Use patterns are not zoning districts or overlay zones, but rather forms of development that are authorized in the various zoning districts. Freilich & White, *A 21st Century Land Development Code* (American Planning Association, 2008), at 28, 38. Use patterns could include multiple uses on the site, but would also include dimensional, parking, landscaping, open and civic space, and related standards that work in concert to establish a given pattern of development. This is very similar to the “Place Type” concept used in Loudoun County’s 2019 GP, which blend a variety of use, density, building, parking, and related policies to describe preferred development typologies.

Form-Based Codes. Form-based codes regulate development by controlling physical form and the “public realm” (i.e., community infrastructure and civic spaces), with a lesser emphasis on land use. In their purest manifestation, form-based codes regulate by design features rather than strictly segregated land use. In other words, districts are governed by building form rather than by use. The Form-Based Codes Institute (FBCI), a group of practitioners who are proponents of this concept, illustrate the differences between conventional zoning and design regulations from form-based codes as shown in Figure 1:

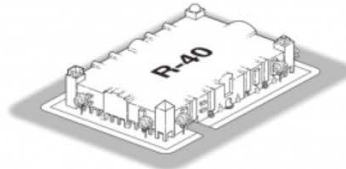
Conventional Zoning

Density use, FAR (floor area ratio), setbacks, parking requirements, maximum building heights specified



Zoning Design Guidelines

Conventional zoning requirements, plus frequency of openings and surface articulation specified



Form-Based Codes

Street and building types (or mix of types), build-to lines, number of floors, and percentage of built site frontage specified.

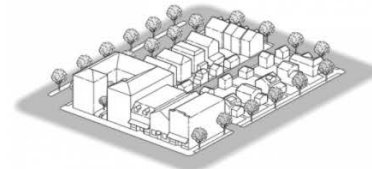


Figure 1. Conventional Zoning versus Form-Based Code (Source: FBCI, at <https://formbasedcodes.org/definition>)

According to the FBCI, a true form-based code should have the following elements (see FBCI, at <https://formbasedcodes.org/definition/>) in addition to administrative procedures and definitions, which are common to any code type:

Regulating Plan	A plan or map of the regulated area designating the locations where different building form standards apply, based on clear community intentions regarding the physical character of the area being coded.
Building Standards	Regulations controlling the configuration, features, and functions of buildings that define and shape the public realm.
Public Standards	Specifications for the elements within the public realm (e.g., sidewalks, travel lanes, street trees, street furniture, etc.).

Composite Zoning. Composite zoning establishes classes of building types (based on design standards) and site design types - or other zoning metrics – to structure zoning districts. It is an alternative to imposing design standards either through separate guidelines, form-based codes, or overlay zones. It also allows the community to customize the districts to site context without having to impose site-specific conditions (as with planned zoning) or through very lengthy and detailed design regulations (as with form-based codes). For example, the zoning ordinance could identify a building type “C” for urban type buildings and type “D” for suburban type buildings, along with site design standards such as “3” for urban sites and “4” for suburban sites. Some parts of the community – such as the UPA or historic villages could be designated for urban buildings and sites, while some corridors could blend and urban building type with a suburban site layout. Composite zoning is used in communities ranging from Cleveland, Ohio to Leander, Texas (near Austin) and Olathe, Kansas (near Kansas City).

Hybrid codes. When zoning regulations blend elements of conventional and alternative code structures, they are known as “hybrid” codes (Freilich & White, at 57). While a hybrid approach could be blend any of code types, the term typically refers to a combination of form-based and other code types. A hybrid code structure could also apply either across the entire ordinance, or in a targeted fashion to individual districts. Most communities that update their zoning ordinances use a hybrid approach. Conceptually, composite zoning and modern versions of performance zoning are really “hybrid” codes. In addition, most contemporary form-based codes retain permitted and prohibited uses along with required building and frontage types. Thus, many citywide form-based codes (such as those adopted by Denver and Buffalo) can also be characterized as “hybrid” codes.

Considering the predominance of hybrid zoning structures, this discussion of code types is not meant as a recommendation for strict adherence to singular code typologies. Code structures in this document are presented for illustrative purposes only and to generate discussion on alternative ways to regulate development in the County’s 2019 GP policy areas. The metrics – not the labels – are the important factor in plan implementation. To some extent, Loudoun County’s current zoning regulations reflects several different approaches to zoning. As such, the County could consider strengthening implementation of a hybrid approach that implements zoning types that relate to the development envisioned in the policy areas. For example, districts in the RPA could retain a conventional approach with larger lot size requirements and little regulation of design, and districts in the UPA could address design through composite or form-based code, or a combination of these approaches.

Table 3. Summarizes approaches to structuring zoning regulations.

Table 3. *Zoning Ordinance Approaches*

Approach	What is it?	Advantages	Limitations	How does this apply to Loudoun County?
Conventional Zoning	This divides Loudoun County into districts that establish uniform use and dimensional standards, such as setbacks, height, and density.	<p>As the most common approach to land development, it is familiar to zoning administrators and applicants.</p> <p>Controls scale.</p> <p>Conventional zoning can easily remove barriers to preferred development patterns by amending dimensional standards. For example, reducing minimum setbacks and reducing minimum parking requirements can accommodate walkable development consistent with the Urban Mixed-Use Place Type in the 2019 GP.</p>	<p>Zoning is often blamed for poor development patterns because it does not comprehensively regulate design.</p> <p>Segregating uses and excessive building setback or height regulations can pose barriers to the Place Types described in 2019 GP. In addition, removing regulatory barriers does not ensure that developers will opt for the preferred development outcome.</p>	Development stakeholders are familiar with this approach, and the 2019 GP includes policies that require use compatibility. Some conventional zoning techniques will probably persist in the new zoning regulations – likely in the RPA.
Overlay Zoning	These are zoning districts that overlap the base residential, commercial, and industrial districts to establish additional standards or incentives.	<p>Allows Loudoun County to supplement existing districts with additional design standards.</p> <p>Very familiar to code users.</p>	<p>Zoning overlays can form the legal framework for other approaches, such as form-based zoning (see discussion below).</p> <p>Complicated because it involves several layers of regulations.</p>	The County has 6 overlay districts, 4 of which address natural resource or environmental issues (Floodplain (FOD), Mountainside Development (MDOD), Quarry Notification (QN), and Limestone (LOD)). The Airport Impact Overlay (AI) addresses land use impacts of airports, particularly noise and height limitations. The Village Conservation (VC) overlay district is intended to protect the historic development patterns of the County's traditional villages, although it needs improvement to accomplish its purposes as discussed later in this report.
Planned Unit Development (PUD)	This allows the modification of development standards for master planned developments to provide more creative approaches to development.	<p>As with conventional zoning, this is a common approach and is familiar to code users.</p> <p>It is flexible and allows standards to be negotiated on a case by case basis.</p>	<p>In many communities, the lack of standards often produces unpredictable and undesirable development outcomes.</p> <p>PUD can result in an unpredictable and potentially lengthy approval process.</p>	The County already uses this approach for its 19 planned development (PD) districts. While PD is designed for case-by-case review in most communities, Loudoun County's PD regulations site span over 200 pages. These standards are more prescriptive than the PUD approach used in most communities.
Composite Zoning	Rather than having zoning districts of just one component (a list of use districts), composite districts provide separate and independent zoning components such as use, site, and architectural characteristics. One of each of these components then can be combined to create a "composite" zoning district.	This provides a very flexible approach to zoning, while preserving the basic standards that code users are familiar with.	This has the effect of a series of overlay districts, so it is more complicated than conventional districts.	This approach could apply well to districts that accommodate higher density housing and mixed-use development. Rezonings would designate the applicable use, building, and site design categories. Olathe, Kansas and Leander, Texas are examples of communities who have adopted composite codes.

Approach	What is it?	Advantages	Limitations	How does this apply to Loudoun County?
Use Patterns	This establishes a series of design templates that can be permitted either by right or through discretionary procedures. For example, a master planned development that would normally require PD approval could be listed as a permitted use in the district, along with the building, site design, and street standards that apply to it.	Streamlines the approval of development patterns that the community wants to encourage. Provides predictable design standards.	Can be difficult to understand. In addition, to the extent that the system is applied to administrative (rather than discretionary) approvals, neighbors would have little opportunity to comment on the application and to shape its outcome and the County would not receive proffers from rezoning cases. The concept is effective in communities with large tracts of land suitable for master planned development. Therefore, there is some applicability to the TPA and RPA because the zoning in those locations matches planned density and little growth is anticipated.	This could work well for conservation subdivisions and small, mixed use neighborhood designations. Use patterns could apply administratively or to rezonings-for example, in the TPA. Similar to composite zoning, it could provide a useful alternative to applications that lack sufficient detail for full staff review without additional documentation (e.g. design guidelines, proffered detailed development plans, etc.), because the use patterns would include detailed requirements for building and site design. Suffolk, Virginia and San Antonio, Texas are examples of communities that have implemented use patterns.
Design-Based Zoning (Form-Based or Transect-Based)	Divides County into zones where the regulations vary by physical design characteristics, rather than by use.	Directly addresses design and gives landowners flexibility as to permitted uses. Applies well to urban situations, such as downtowns, urban districts, and corridors.	Tends to be complex and unfamiliar to existing code users, although the concept has gained nationwide popularity over the past decade. Neighborhood interests and property owners might still want to control uses (e.g., intensive non-residential uses in residential neighborhoods, residential uses in industrial zones that are reserved for employment generators). Limited in scope - they do not generally address issues such as congestion, suburban corridors, stream corridors, and related issues.	The 2019 GP provides policy support for design regulations. Loudoun County has tested design regulations to a certain extent in PD approvals and the Route 28 Optional Overlay Districts. A recent study identified 742 form-based codes and guidelines throughout the nation. This includes 26 form-based codes in Virginia, including the Leesburg Crescent Design District and Neighborhood and Commercial Centers Form-Based Codes in Arlington .
Design guidelines	Separate document(s) adopted by a jurisdiction that contain flexibly written, and typically nonbinding, considerations for design. The guidelines are usually administered by a board, such as the planning commission or a separately created design review board.	Flexible - the County and applicants retain more discretion in negotiating design solutions and can better customize design objectives to specific projects than through specific standards. Can be amended more readily than the zoning regulations.	Scatters design considerations among separate documents, which can lead to confusion and complexity. Sometimes unclear to applicants and administrators whether a guideline is binding. Applicants can resist meeting design guidelines because as guidelines they consider them not legally binding. Compliance negotiation can lead to delays in development approval or unpredictable results.	Design guidelines could be applied on a case-by-case basis. For example, they could apply as part of a neighborhood conservation district that follows in area plan. Currently, the County's seven Historic and Cultural Conservation Districts are subject to historic district guidelines, which regulate building form and materials as well as site design.

Approach	What is it?	Advantages	Limitations	How does this apply to Loudoun County?
Performance Zoning	Like form-based zoning, performance zoning (pioneered by our teaming partner Kendig-Keast Collaborative) divides districts by prescriptive ratio-based metrics to control development impacts. For example, the regulations could prescribe minimum ratios for landscaping and open space, along with maximum impervious surface, building coverage, or floor area metrics by district.	Like form-based zoning, a performance model is both more flexible than conventional, one-dimensional zoning. Standards such as impervious surface limits are effective in controlling development within riparian corridors.	Can be complicated. Development ratios tend to have a very weak relationship to design and are largely limited to limiting the scale and footprint of development.	Effective where there are persistent environmental or topographical issues, such as floodplains, riparian corridors, or steep slopes. However, performance zoning is not limited to these issues, and Lane Kendig and Bret Keast of Kendig Keast Collaborative have now expanded these concepts to character-based regulations that blend building and site design with performance metrics. The New Castle County, Delaware Unified Development Code and Lake County, Illinois Unified Development Ordinance are examples of a performance zoning code.

Recommendations for Loudoun's Zoning Ordinance Structure

Loudoun County is a diverse community, with areas that could benefit from design-based regulations and areas where conventional districts will ensure appropriate neighborhood compatibility. We recommend a hybrid approach, such as composite zoning, use patterns, or the splicing of design based regulations into the existing districts, to ensure that the range of policies in existing plans are implemented without abruptly changing the language and practice of development in the County. For the County's Rural Place Types, the districts can include cluster or conservation subdivision options with performance-based metrics that preserve the County's countryside and environmental resources. Building and site design typologies in for Urban Place Types and walkable centers in the Suburban and Transition Place Types can blend form-based metrics with conventional use and setback regulations. The district and development regulations could define a range of building and site design typologies. For any given application, the building and site design typology would correspond to the underlying district.

Composite Zoning Example

The district equivalency table prepared by Kendig-Keast includes a new Suburban Commercial (SC) district for the Suburban Commercial Place Type. The building typologies could include an urban building type (with a high level of fenestration at the ground level) designated as building type "C," a suburban building type (with lower fenestration levels and larger floor plates) designated as building type "D," an urban site design type (with maximum setbacks and reduced parking required) designated as site design type "3," and a suburban site design type (with larger setbacks in landscape buffers and higher parking ratios) designated as site design type "4." Depending on the location, the application could propose districts with the urban building and site design types, with the district mapped as "SC-C-3" (meaning a SC district with building type "C" and site design type "3"). Or, if the site location lends itself to a more suburban design but an urban building type is consistent with the neighborhood, the application could request an urban building type and suburban site design (or "SC-C-4"). This allows the county to accommodate a range of development contexts within a district without having to separately negotiate each development's design aspects. This is the experience of communities that have used composite zoning.⁵

⁵ Hutton, "The Power of Composite: Shaking Conventions with Conventional Zoning." *Practicing Planner* 4(1) (Spring 2006); Hutton, "Zoning à la carte," *Planning* (January 2006).

Adjust District Nomenclature. The Revised 1993 Zoning Ordinance uses conventional district nomenclature for base districts, suggesting that the regulations are organized by use rather than the 2019 GP's Place Types. Other communities have dropped the “residential” nomenclature for districts other than single-family and targeted the naming conventions to reflect mixed use neighborhood characteristics. For example, [St. Petersburg, Florida](#) replaced its “residential” districts with “neighborhood” districts. This recognizes that some small-scale commercial and civic uses are appropriate in many of the higher density residential districts (include link). A logical naming convention could be to use the 2019 GP Place Types (see Section III).

Planned Development District Alternatives. The planned development district should be replaced with a single or substantially reduced, negotiated planned development process in lieu of 19 planned development districts. Instead of relying on planned development regulations, the new base zoning districts would replace the design standards currently found in the planned development districts with composite standards, use patterns, or updated design standards for each district. A single-or limited number of-planned development districts would include a more open-ended process and potential conditions where the applicants demonstrate that none of the base districts are suitable for their property. In turn, the base districts in the new zoning ordinance should codify the conditions normally found in land development applications. The new zoning ordinance should then reserve planned development for developments that are unusual in nature, or that offer exceptional community benefits or design, in a way that the base districts cannot accommodate. As an example, the [Olathe, Kansas Unified Development Code](#) replaced its planned districts with composite zoning districts. The composite districts are not planned districts, but instead are base districts that include building and site design standards. As an alternative, the Olathe Unified Development Code includes a single, two-page set of planned development district regulations along with a corresponding rezoning and master plan submittal process.

St. Petersburg, Florida Zoning Districts:

A. Neighborhood traditional districts.

1. NT-1: Neighborhood Traditional Single-Family.
2. NT-2: Neighborhood Traditional Single-Family.
3. NT-3: Neighborhood Traditional Single-Family.
4. NT-4: Neighborhood Traditional Single-Family.

B. Neighborhood suburban districts.

1. NS-1: Neighborhood Suburban Single-Family.
2. NS-2: Neighborhood Suburban Single-Family.
3. NSM-1: Neighborhood Suburban Multifamily.
4. NSM-2: Neighborhood Suburban Multifamily.
5. NSE: Neighborhood Suburban Estate.
6. NMH: Neighborhood Suburban Mobile Home.
7. NPUD-1: Neighborhood Planned Unit Development.
8. NPUD-2: Neighborhood Planned Unit Development.
9. NPUD-3: Neighborhood Planned Unit Development.

Organization

This section assesses how the Revised 1993 Zoning Ordinance is organized for both casual and technical users and the opportunities for improvement to aid the ease of navigation, understanding, and administration. Alternatives are explored that best fit the regulatory approach, the content and structure of districts and standards, the capacities of the applicable boards and commissions in the review of applications, and the County Staff in processing them.

The County's Zoning Ordinances are maintained by the Department of Planning and Zoning (DPZ) on its [website](#). It is not codified with the Codified Ordinances of Loudoun County at the [American Legal Publishing](#) website, although the Codified Ordinances contain a number of provisions related to the zoning regulations and subdivision or development approval process. These are summarized in our earlier report (Zoning Ordinance (ZO) Rewrite Task 1 (Code Audit), Subtask 2 (Related County Code provisions and their relationship to ZO Rewrite) (April 23, 2020)).

The Revised 1993 Zoning Ordinance is broken into eight articles. Three of those articles establish the zoning district regulations. Article 5 is a catch-all, including both development standards (such as special setbacks and buffers, parking and loading, signs, landscaping, and performance standards), and additional regulations for individual uses (Section 5-600). Article 6 consolidates the zoning development processes. Article 7 addresses the affordable dwelling units (ADU) program. Definitions are established in Article 8, although the Route 28 Corridor includes supplemental definitions (Section 4-3000). Specific issues related to codification, development standards, use regulations, and procedures are addressed later in this report.

Zoning regulations are legal documents that implement plan policies. While they should be legally enforceable, they communicate to a variety of audiences. These include citizens, applicants, elected officials, and professional staff. Therefore, improving readability will:

- Improve administration by making information easier to find and understand;
- Enhance public input by making complex, technical information accessible to casual users; and
- Encourage economic development by making development standards and procedures clearer to applicants.

Rewriting the zoning regulations is not a simple matter of convenience. Poorly drafted regulations waste valuable resources - both time and money - for the public and private sectors. Poorly drafted regulations include those that lack cohesive organization and precise language, those that create unduly complicated and cumbersome approval procedures, and those that have been amended without any thought of integrating the amendments into the existing process. Like any regulatory scheme, the County must review the zoning regulations periodically to ensure that substantive provisions are not obsolete. Updating and streamlining the regulations will save the County and its stakeholders time and money, and potentially harness new opportunities for economic development and community design.

Loudoun County adopted the Revised 1993 Zoning Ordinance over 26 years ago with piecemeal updates since that time. While it is a massive document, it does reflect some modern best practices for organizing a zoning ordinance that we recommend carrying forward. These include:

- A detailed Table of Contents that includes both major headings and section levels;
- A generally sound organizational format, with the zoning district regulations found near the front of the document and definitions at the end; and
- Indented subsections.

Several provisions would improve the Revised 1993 Zoning Ordinance's readability and give readers an easier way to find information:

- **Graphics.** As illustrated by the example below, modern development codes typically include graphics as another method to explain code language. Graphics can visually demonstrate the relationship of several code provisions. Graphics should illustrate dimensional relationships and building and site planning concepts. Graphics help to explain or amplify material that is sometimes difficult for casual or non-technical users to understand. Other than the sign and Route 28 regulations, the current regulations are largely devoid of graphics. In addition, the sign graphics are placed at the end of the section, forcing readers to flip back and forth between text and the related graphic.
- **A better sequence.** A zoning ordinance should create a flow that puts technical provisions in the back of the document and more substantive provisions to the front. While zoning ordinances are not intended to be read from beginning to end, placing the more commonly used material near the front makes those provisions more accessible for a wider audience. The Revised 1993 Zoning Ordinance generally does a good job of placing the more interesting and commonly used material (i.e., the zoning districts) to the front of the ordinance, with technical material (such as definitions) to the back. However, Article 1 (General Regulations) is excessively long for its purpose (26 pages) and filled with technical material that belongs in other parts of the ordinance. It appropriately leads with the title and purpose of the ordinance and statement of applicability (Section 1-

100). However, that section, along with Section 1-400, continue by addressing legacy provisions (such as existing special exceptions and variances) and nonconformities. These are exceptional situations that belong in a later Article of the Revised 1993 Zoning Ordinance. Material dealing with how the ordinance is interpreted (Section 1-200) and the technicalities of the zoning map (Section 1-300) should be moved to the rear of the ordinance along with the definitions, because these address matters of interpretation. The balance of Article 1 - or an executive summary - should simply tell the reader why the Revised 1993 Zoning Ordinance exists and how to find the information they need.

- **Right-size the number of articles.** While the Revised 1993 Zoning Ordinance does not have an excessive number of articles, the zoning ordinance could break out some articles for better clarity. For example, additional regulations for specific uses is buried in Section 5-600. Since there are many uses that require special regulation, this section should be a separate article. This article would include additional use-specific regulations, such as accessory uses and structures (Section 5-100), home occupations (Section 5-400), temporary uses (Section 5-500), and vehicles in residential districts (Section 5-800).
- **Consolidate chapters that deal with similar topics.** For example, articles that address procedures, development standards, supplemental uses, and legal technicalities should collapse into single articles. Article 6, for example, both establishes boards and commissions, and consolidates the procedural sections. The zoning ordinance should break this up into two articles with one article consolidating procedural workflows and another, later article establishing boards and commissions. Section VI of this report deals more specifically with those issues.
- **Integration.** The Revised 1993 Zoning Ordinance is not always integrated with related provisions of the Codified Ordinances, the Virginia Code, related documents (such as the FSM), or the 2019 GP. This is often due to changes to the Codified Ordinances, state statutes, or related items that occurred since adoption of the Revised 1993 Zoning Ordinance. However, cross-references and the integration of terms assists both applicants and administrators with the entire development process and minimizes confusion that results when provisions are inconsistent. A useful technique to incorporate the 2019 GP is an *italicized purpose statement* at the beginning of each section. The purpose statement would explain why the provisions exist and cite to the 2019 GP or related plans or studies. This highlights those provisions, allows for useful cross-references, and offsets them from the substantive standards and requirements. To the extent feasible, the purpose statement should be a tool to ensure the zoning district implements the associated Place Type.
- **Forms and Checklists.** Ordinance provisions are often cluttered with information submittal requirements. These are of little interest to the public yet needed to ensure that applications are complete for review. For example, the MR-HI (Mineral Resource-Heavy Industry) district includes three pages of submittal requirements for stone quarry special exception permit applications (Section 3-1008). The zoning ordinance could include an appendix (cross-referenced in the district regulations) that consolidates information like this. This minimizes the length of the substantive provisions of the ordinance and creates a handy checklist for applicants and administrators. A detailed checklist of information in the zoning ordinance would require a zoning ordinance amendment (ZOAM) to add or delete a submittal requirement. However, this improves the enforceability and transparency of submittal requests.

Italicized purpose statement

Running header

Article II. Zoning Districts / § 48-2.13 ("CG" General Commercial)

48-2.13 CG (GENERAL COMMERCIAL)

This provides commercial activities that serve a major segment of the total community population. In addition to a variety of retail goods and services, these centers may typically feature a number of large traffic generators that require access from major thoroughfares. The extent and range of activities permitted are in the moderate to medium intensity range with ground floor area limitation.

(A) PERMITTED USES

Intended exclusively for commercial uses. Permitted uses include shopping centers between 15,000–400,000 square feet, restaurants, grocers, and hardware stores. For a complete list of permitted uses refer to § 48-2.50 (Permitted Uses).

(B) COMPOSITE STANDARDS FOR BUILDING DESIGN

Refer to § 48-2.16.

(C) COMPOSITE STANDARDS FOR SITE DEVELOPMENT

Refer to § 48-2.17.

(D) DIMENSIONAL STANDARDS

A. Density ⁽¹⁾	110
B. Lot Area (minimum) ⁽²⁾	10,000
C. Frontage (minimum)	65
D. Front setback (minimum) ⁽³⁾	See subsection (c)
E. Side setback (minimum)	0
F. Rear setback (minimum) ⁽³⁾	20
G. Height (maximum)	60
H. Lot coverage (maximum)	80%

Integrated graphics

Simple, indented subsection structure

(F) FRONT SETBACKS

- (1) If the average front setback on the same block face is no more than 25 feet, the building setback shall align with the existing setbacks of buildings on the block or facing block (see figure below).
- (2) Mixed use buildings may reduce the front setback to zero (0).
- (3) The minimum front setback for all other buildings is as designated in subsection (b), above.

1 Building conforms to average front setback - appropriate

2 Building sited beyond average front setback - inappropriate

(G) REAR SETBACKS

The Planning Director may approve a rear setback of up to 5 feet if the lot adjoins an alley or if the lower setback conforms to the average setback on the block face, and:

- (1) The reduced setback is consistent with the Comprehensive Plan; and
- (2) The proposed building design conforms to the Type A standards and the site development conforms to Type 1 or Type 2 standards.

(G) LOT SIZE TRIGGER FOR PD

If the gross floor area of all buildings on the development site is at least 50,000 square feet, the applicant must obtain a rezoning to Planned Development (PD).

(H) COMPOSITE BUILDING DESIGN AND SITE DEVELOPMENT STANDARDS

The Type A-C Building Design and Type 1-3 Site Development Standards in § 48-2.16 are adopted for the CG District.

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Figure 2. Example of Recommended Format

Codification

This section reviews the structural integrity of the Revised 1993 Zoning Ordinance pertaining to its system of numbering and cross referencing, as well as its layout, format, and visual hierarchy.

Section Numbering. As discussed above, the Revised 1993 Zoning Ordinance is broken into articles and sections, with some articles broken further into divisions. Each section begins with a subsection that mirrors the section number. For example, Section 4-100 begins with subsection 4-101, then 4-102, etc. Each of those subsections includes the following further subsections: (A), (1), (a), (i), etc. The County Codified Ordinances, by contrast, is divided into parts, titles, and chapters. Sections begin with the chapter number, followed by a decimal and two unique digits. For example, the first section of Chapter 1220 (Erosion Control) is labeled 1220.01. Subsections are then labeled (a), (1), etc.

The Revised 1993 Zoning Ordinance's current numbering system is unique, which makes it somewhat difficult to follow until the reader becomes familiar with it. However, the first-order subsections do remind the reader of the major section they are in and minimizes the need for deep subsections. On the other hand, it is inconsistent with the Codified Ordinances, not familiar to most readers, and is somewhat difficult to create in software, such as enCodePlus.

The Revised 1993 Zoning Ordinance currently has a simple subsection structure, with subsections usually no more than two deep. However, the initial section after each main section is a number that repeats the main section. This is an unusual practice, as most codes (such as the Codified Ordinances) start subsections with "(a)", "(1)" or the

like. This practice simplifies formatting as future amendments are written and is far more common and understood by persons who frequently read ordinances. In addition, other techniques mentioned below can resolve the crowded, legalistic style of the zoning ordinance. We recommend the more conventional approach with the section number (e.g., 1-200) followed by conventional subsections (e.g., (A), (1), etc.) to simplify drafting and useability.

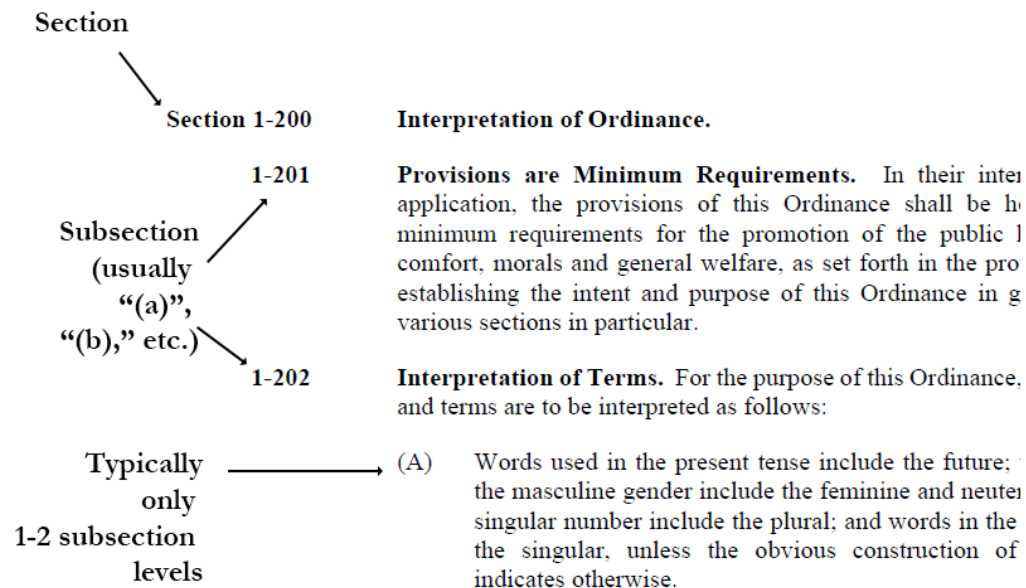


Figure 3. Subsections from Revised 1993 Zoning Ordinance with Recommended Changes

Page Footers. The County could enhance the “running” or repeating footers for each article and section. Currently, there is a running footer for each section. However, the footer is not titled, nor is there any reference to the article. Inserting the article number, along with titles for both the article, division, and the section, would help the reader place what they are reading in context.

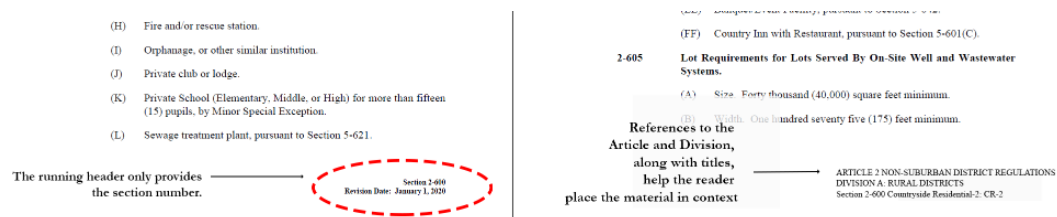


Figure 4. Running Headers

Lists and Tables. The Revised 1993 Zoning Ordinance at times uses lists and tables to replace long paragraphs. However, this is inconsistent throughout the document. Whenever possible, the ordinance should break long paragraphs into lists, subsections, or tables. White space in lieu of long, run-on paragraphs creates visual relief for the reader, and makes information easier to find. In addition, tables and lists can often replace subsections to maintain a less legalistic, and more readable, display of text and graphics.

Reserved Sections. Section numbering should enable the insertion of amendments, as needed. Currently, there are few “reserved” sections. This means that new sections inserted in future ordinance amendments could require renumbering of large portions of the ordinance. In lieu of reserved sections, the numbering system could leave between numbers where future amendments are expected. For example, instead of section 1-101, 1-102, 1-103 and so forth, the numbering section could use 1-100, 1-105, 1-110, etc. This allows four (4) new sections between 1-100 and 1-105 without having to renumber subsequent sections.

Cross Referencing. Another useful codification technique is cross referencing. The zoning ordinance should always strive to keep like provisions together and avoid the need to flip back and forth between articles and sections. However, this is sometimes unavoidable without repeating large amounts of information. In this case, a cross reference notifies the reader of related zoning ordinance provisions. It also reduces or eliminates the risk of inconsistencies if those provisions are deleted or renumbered.

The County's use of the enCodePlus software will allow for collaborative drafting and "live" cross-references that automatically renumber when a section number changes. The software can also hyperlink to a section online and generate lists of hyperlinks sections. This allows for quicker access to cross reference provisions, while minimizing the need to repeat material that adds significantly to the ordinance's length.

Format

This section outlines the proposed content of the new zoning ordinance and, as applicable, means for aligning the zoning ordinance with other development-related regulations.

To effectively organize the new zoning ordinance, enabling readers to find the information they need while ensuring that the ordinance is complete and integrated with other key County ordinances, plans, and manuals, we suggest the following general outline (note, a complete outline is provided later in this project in Task 4.2). This outline also assumes that the County will continue to follow the current article, division, and section numbering style. The format here can easily adjust to any changes to that codification style.*****

Proposed Outline

- Chapter 1. Introduction
- Chapter 2. Zoning Districts
- Chapter 3. Uses
- Chapter 4. Overlay Districts
- Chapter 5. Development Standards
- Chapter 6. Signs
- Chapter 7. Procedures (note: planned development would become a process with negotiated standards)
- Chapter 8. Affordable Dwelling Units
- Chapter 9. Nonconformities
- Chapter 10. Officials, Boards, and Commissions
- Chapter 11. Definitions and Rules of Interpretation
- Appendix A. Submittal Requirements

Definitions

The definitions section of the ordinance is critical because it gives meaning to terms of art and legal provisions in the Zoning Ordinance. Definitions should never include standards because readers will normally search the body of the ordinance for development requirements. Definition should only explain terminology that lacks a generally understood meaning. The ordinance should, however, define every land use listed in the zoning district regulations. (see also Section V. Use Regulations). . In addition, the definitions article should include all rules of interpretation. This would include the methodology for zoning district boundary determinations.

General and Use Definitions. The definitions could include two separate sections, one for general definitions and the other for definitions specific to uses. For example, the New Castle County, Delaware Unified Development Code includes both Use Definitions (Division 40.33.200) and General Definitions (Division 40.33.300) (see <http://czo.nccde.org/>). This tames the length of the definitions section and creates a handy companion document for the use matrix or table of permitted uses described later in this this report. County staff can also maintain both the use matrix and definitions in a single Excel document, as a companion to the official, codified version of the Zoning Ordinance.

Statutory Definitions. Many definitions are borrowed from state or federal law. In Virginia, the zoning enabling legislation includes a large number of definitions, along with recent legislation governing specific types of uses. The definition can simply cross reference the statute, with enCodePlus providing a direct hyperlink to the applicable statute. Copying the statutory definition is another approach but this requires an ordinance amendment whenever the statute changes. Another approach is a note or commentary that both cross-references the statute and copies the then-current statutory definition. This provides the definition in one place and avoids having to amend the Zoning Ordinance whenever the statutory definition changes. For example, the Zoning Ordinance could include the following definition of “agricultural operation”:

Agricultural Operation: as defined by Code of Virginia § 3.2-300, as amended.

[Note: this current statutory definition is “any operation devoted to the bona fide production of crops, or animals, or fowl including the production of fruits and vegetables of all kinds; meat, dairy, and poultry products; nuts, tobacco, nursery, and floral products; and the production and harvest of products from silviculture activity.”]

III. Districts

The district analysis was prepared by Kendig-Keast Collaborative in a separate document.

IV. Development Standards

This section of the report explores plan policies, strategies, and actions to recommend development standards applicable to the different policy areas and the goals for protecting natural, environmental, and historic resources; advancing responsible development patterns; providing for quality affordable and attainable housing; investing in timely and adequate infrastructure; promoting economic development; and wisely managing the County's fiscal resources.

While conventional zoning regulations control building height and setbacks, zoning regulations increasingly regulate the scale, orientation, and architectural elements of buildings. Zoning regulations can apply design standards to any kind of development, including single-family, multifamily, commercial, or industrial uses. These standards are critical for effective placemaking. While building heights, setbacks, coverage, and related zoning metrics control the scale and intensity of development, related standards shape development outcomes as well. Some of the standards – in particular, standards for street and infrastructure design – fall outside of the purview of the Zoning Ordinance. However, development standards directly affect the cost of development and can require the use of significant land area on a site. Therefore, it is important that the standards are carefully calibrated to each planning area so that they accomplish their intended purpose without creating regulatory barriers to the design objectives identified for Place Types in those areas.

Parking

This section briefly summarizes parking issues, as our team will further address parking in Task 6 of this project. Minimum parking requirements were historically designed to reduce street congestion and to avoid spillover parking in residential neighborhoods. These regulations establish a minimum number of parking spaces for new development, typically based on use and include geometric design of parking spaces and bays, along with required surfacing.

Does Loudoun County regulate parking now?

The Revised 1993 Zoning Ordinance currently requires a minimum number of parking spaces for listed uses (Section 5-1100). In addition, the Zoning Ordinance establishes parking ratios for individual districts (such as PD-TREC and PD-TRC) and uses regulated by Section 5-600 (such as farm markets, material recovery facilities,) and Section 5-400 (home occupations). The required spaces are tied to dwelling units, gross square footage, employees, building occupancy, or other variables. Applicants can reduce parking spaces by:

- Obtaining approval of a parking demand analysis by the Zoning Administrator;
- Sharing parking among mixed uses on the same site that have different peak parking demands;
- Demonstrating that parking demands have a “captive market” – i.e., they are derived related uses within 400 feet (the presumed walking distance) for retail and restaurant uses;
- Demonstrating the availability of public parking;
- Demonstrating the availability of alternative transportation (such as transit, carpooling/van pulling, or shuttle service), for reduction of up to 35 percent; or
- Obtaining a special exception from the Board of Supervisors.

Issues with minimum parking requirements

Cost and Design. An unintended side effect of minimum requirements is excessively sized surface parking areas. For example, a 60,000 square-foot grocery store or retail business in the C-2 district would require a minimum of 90,000 square feet of paved parking surfaces, with additional areas required for landscaping - or 150 percent more than the areas for which the property owner charges rent. This creates economic waste because the property owner cannot charge rent for the spaces, although a certain number of spaces is certainly needed to provide access to the site. In fact, commercial properties often include more parking than the zoning ordinance requires. Regardless of why it is provided, parking is a development cost that is ultimately capitalized into the cost of housing and consumer goods. See Shoup, *The High Cost of Free Parking* (American Planning Association, 2011), at 185-200; Willson, *Parking Reform Made Easy* (Island Press, 2013), at 25-30.



Figure 5 Excess parking creates drainage, heat island, and economic waste issues

Walkability and Environmental Impacts. These large surface parking areas inhibit walkability by spreading uses apart, forcing pedestrians to compete with cars to reach retail and employment destinations, and making vehicular travel convenient relative to foot travel. They also create “urban heat islands” as the summer sun hits the pavement and create the need for stormwater drainage systems. The stormwater management systems needed to capture runoff from parking areas consumes even more land, spreading uses farther apart and creating barriers to pedestrian access. This, in turn, encourages business to provide larger signs to identify the buildings that are set back behind the parking.

How can Loudoun County improve parking regulations?

- Communities are increasingly responding to the issues identified above by either optimizing and reducing their parking minimums or getting rid of them altogether. Eliminating parking minimums will leave the supply of parking to the marketplace.
- Some communities establish a maximum number of spaces, or a “soft” maximum that triggers additional requirements when spaces increase. For example, if spaces exceed a given ratio, the zoning ordinance could trigger transit, impervious surface, or other transportation or stormwater requirements. The zoning ordinance could require metered spaces for an application, as a way to address traffic impacts or as a way to comply with a “soft” maximum number of spaces.
- Consider addressing spillover issues with a residential parking permit system or metering. This would not require any change to the zoning or subdivision regulations but is appropriately addressed in the Codified Ordinances.
- Some communities tie the location and size of parking areas to landscaping or shading requirements. For example, the County could set a higher landscaping requirement for parking located between a building and the street, and/or a tiered percentage that increases with the size of the parking area (Figure 6).
- Add alternative parking options, such as bike parking, short-term car/ride-sharing parking, and car/ride-sharing pick-up and drop-off locations

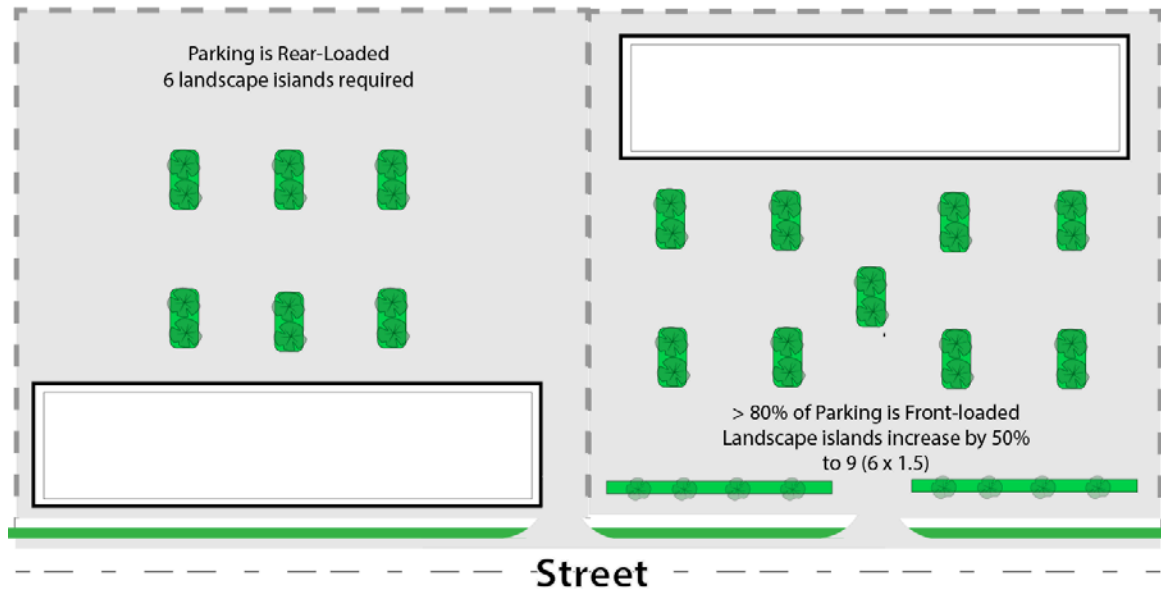


Figure 6. Landscape Island Increase for Parking Located between the Building and the Street

Landscaping

Most modern zoning or development ordinances have landscaping standards. Buffer and landscaping requirements mitigate environmental site conditions, minimize conflicts between incompatible uses, and soften the visual impacts of parking areas and intensive uses.

How does the County regulate landscaping today?

Primarily, landscaping, buffer yards, and screening are regulated pursuant to Section 5-1400 of the Revised 1993 Zoning Ordinance. In November 2019, Loudoun County adopted ZOAM-2017-0005, which significantly updated and amended this section. Additional limited landscape and screening regulations are included in certain zoning districts. Section 5-1300 of the Revised 1993 Zoning Ordinance establishes tree planting and replacement requirements. In general, the County's landscaping regulations require:

- Minimum canopy requirements for site plans, ranging from 10 to 15 percent, with 20 percent required for plans of subdivisions (excluding single family residential subdivision in the A-3, A-10, AR-1, AR-2 Zoning Districts) if the pre-existing tree canopy is at least 20 percent (Section 5-1303).
- Road corridor buffers (ranging in width from 10 to 100 feet with various levels of planting (using a plant unit equivalency metric)) and setbacks (ranging in width from 25 to 200 feet for buildings and ranging from 25 to 125 feet for parking (Section 5-1403(B)). The prescribed building setbacks exceed the parking setbacks, which encourages front-loaded parking.
- Buffer yards to separate different uses, ranging from 10 to 25 feet in width and with various levels of planting (using a plant unit equivalency metric) within each buffer category (Section 5-1404).
- Interior and exterior parking lot landscaping and screening requirements for lots with 20 or more vehicle spaces (Section 5-1407).

The Zoning Administrator may waive landscaping requirements based on criteria established in Section 5-1409, with a minor special exception required for the modification of road corridor building or parking setbacks.

What are the issues with landscaping and landscaping regulations?

The current landscaping requirements do not appear out of line with a typical suburban county. However, the 2019 GP established a new UPA, as well as new Place Types and policies that encourage more compact, walkable development in the UPA, SPA, and TPA. In urban contexts, landscaping consumes land area and can create physical barriers between uses that would otherwise be accessible by foot. In addition, landscaping adds to upfront development costs. It also adds costs over time through maintenance and irrigation; however, long-term savings from stormwater management and energy savings through shading of building and parking areas can offset some of these costs. The Revised 1993 Zoning Ordinance has set precedent for landscaping reductions in urban, walkable contexts (or shopping centers) that the new ordinance can build on. In these districts, buffers are not required internal to the districts (e.g., PD-CC, PD-TRC, PD-TREC, PD-TC, and PD-MUB (Section 5-1402(B)(4)) or on the edge of the district (PD-TRC (Section 4-1118)). These districts typically require street trees, parking lot landscaping, and road corridor buffers only along major roads forming the boundaries of these districts (Section 5-1400).

How can Loudoun County regulate landscaping more effectively?

- Create specific buffer types and standards that can be applied as needed throughout the zoning districts. For example, this could allow for wider buffers with lower planting density for intensive commercial uses and narrower buffers with fencing in urban contexts. This would expand Section 5-1404(D), which has three different buffer categories based on width and planting density by adding an urban context buffer.
- Develop more uniform and specific site landscaping standards and requirements and consider adding a minimum open space requirement for most zoning districts. Consider allowing applicants to substitute civic spaces and usable open space for required landscaping.
- Develop streetscape standards that can be applied to the UPA and walkable centers in the SPA and TPA.
- Ensure the street tree requirements for appropriate zoning districts uniformly apply, are only required in appropriate locations (currently, they are required along alleys in some instances), and include a reasonable and implementable spacing requirement.
- Consider building foundation planting requirements for suburban contexts (see Figure 7 Foundation Plantings).
- Consider a minimum landscaping requirement for residential front yards.
- Include a tree canopy requirement for rural cluster subdivisions.



Figure 7. Foundation Plantings

Natural, Environmental, and Heritage Resource Protection; and Rural Land Preservation

Loudoun County has abundant natural, environmental, and heritage resources. Countywide, prime agricultural soils occupy 19 percent of land and steep slopes occupy 16 percent of land. The 2019 GP devotes an entire chapter to natural, environmental, and heritage resources, and establishes specific policies for their protection. The 2019 GP also emphasizes the preservation of rural land in the RPA for rural economy uses in order to both “preserve the rural character of the landscape” as well as “support the County’s environmental goals.” Policies protecting natural, environmental, and heritage resources, and policies supporting agricultural land preservation and uses are included in the following table, along with existing regulatory provisions and additional potential regulatory options:

Table 4. Natural, Environmental, and Heritage Resource Protection and Rural Land Preservation Policies

Policy	Existing Provisions (Revised 1993 Zoning Ordinance)	Potential Regulatory Options
Natural, Environmental, and Heritage Resources (NEHR) Policies		
Implement a process to identify and build around natural, environmental, and heritage resources worthy of preservation.	<p>The administrative site plan review processes partially implement these policies through regulations for open space, landscaping and buffering, village conservation, mountainside development, steep slopes, and floodplains. However, most protective measures currently occur through legislative review.</p> <p>The Zoning Ordinance inconsistently provides vague purpose statements and requirements to identify or “minimize” impacts on natural resources. For instance, potential impacts to the environment or natural features are considered during legislative processes (Sections 6-1210; 6-1309). Cluster developments in the SPA are to “maximize open space [and] minimize alteration of natural site features” and “retain, to the extent feasible, natural features” (Section 6-1405). PD applications are to “protect and preserve, to the extent possible, natural features” (Section 6-1502).</p>	<ul style="list-style-type: none"> • Continue to require identification of unique geological resources, archeological resources, and related heritage resources in the submittal requirements. The Zoning Ordinance should provide for contextually appropriate incorporation of low-impact development (LID), environmentally sensitive site design, and conservation design into both site design regulations and a robust menu of open space options. • Establish a more robust river and stream protection requirement as recommended by the River and Stream Corridor Resources (RSCR) policies.

Policy	Existing Provisions (Revised 1993 Zoning Ordinance)	Potential Regulatory Options
<p>Preserve heritage resources (historic, cultural, and scenic areas) by ensuring they are adequately buffered, assessing historic significance prior to issuing demolition permits for structures 50 years old or older, accepting cash proffers for enhancement and/or improvement of historic features, and establishing adaptive reuse standards.</p>	<p>Historic Preservation. The Zoning Ordinance establishes the Historic District Review Committee (HDRC) (Section 6-300) and the procedures for establishing historic districts and administering applications for properties in those districts (Division F; Sections 6-1800 and 6-1900). While the procedures to establish historic districts and administer approvals in those districts are enumerated in the Zoning Ordinance, the adopted Historic District Guidelines for each Historic District are separate documents incorporated into and part of the Zoning Ordinance by reference (Section 6-1901). The County's Zoning District Map identifies the location of each district.</p> <p>Protection of historic/heritage resources is also taken into consideration throughout the Zoning Ordinance and given special consideration when siting or regulating certain uses or development patterns, when applying the Floodplain Overlay District (FOD), and when evaluating requests to modify the Additional Regulations for Specific Uses in Section 5-600.</p>	<ul style="list-style-type: none"> • Replace the existing Village Conservation Overlay District (VCOD) and the underlying zoning districts for the Traditional Villages with Neighborhood Conservation Districts based on the existing historic development patterns of the villages. The VCOD applies a general, one-size-fits-all approach, which may not recognize individual village development patterns. The underlying district regulations also do not necessarily address limitations created by these historic development patterns, such as limited locations for off street parking. Neighborhood Conservation Districts will better protect and perpetuate the Traditional Village development patterns and support the establishment of appropriate uses at a Traditional Village scale and design. • Adopt a demolition review ordinance that requires assessment of historic significance prior to issuance of any demolition permit for structures 50 years of age or older. • Ensure nonconforming status is not applied to historic sites and buildings. • Continue to require identification of unique geological resources, archeological resources, and related heritage resources in the submittal requirements of the zoning ordinance. • Incorporate heritage resources through the conservation design process, counting them toward required project civic or open space. • Establish incentives to conserve significant heritage sites, such as expedited application review, density bonus, transfer

Policy	Existing Provisions (Revised 1993 Zoning Ordinance)	Potential Regulatory Options
		<p>development rights, and voluntary density transfers.</p> <ul style="list-style-type: none"> • Adopt adaptive reuse supplemental regulations (see discussion below), recognizing restaurants, overnight accommodations, support shops, and related services as permitted uses in adaptively reused historic resources.
<p>Offset impacts by enhancing and/or recapturing natural, environmental, and heritage resources elsewhere onsite. This includes a new regulatory mechanism to permit a portion required open space to be met by offsite open space to promote more significant, contiguous, and larger open space areas.</p>	<p>Various open space set-aside for PD and optional development types encourage natural resource preservation.</p>	<ul style="list-style-type: none"> • Include provisions in the zoning ordinance to avoid isolated pockets of fragmented open space for new development or subdivisions sufficient to support ecosystems, farms, habitat, and other resources that depend on contiguous spaces of a minimum size. • Create more specific standards for mitigation; avoidance; and BMPs for natural, environmental, or heritage resource protection. • Provide for coordinated review of open space requirements between properties. • For sites of a minimum threshold size, establish a minimum contiguous size for passive open space along with connectivity standards for adjacent, protected, or designated open space or environmental resources. • Consider integrating stormwater management and open space policies by counting stormwater management and low-impact design practices that provide useful open space toward onsite open space requirements.
<p>Create links to adjacent natural, environmental, and heritage resources to create an integrated network and prevent habitat fragmentation.</p>	<p>Optional development types in the TR Districts encourage “maximizing the contiguity of ... open space features such as vegetation, and natural features such as stream corridors,</p>	<ul style="list-style-type: none"> • As part of new and existing overlay districts referenced in the 2019 GP, consider strengthening incentives for high value, connected open space such as lot size reductions or density/floor area bonuses.⁶

⁶ For example, Gallatin County, Montana provides an alternative to 20-acre conventional subdivisions by allowing maximum 1-acre lots with the balance preserved as open space along with a sliding scale that ties density to the open space preserved.

Policy	Existing Provisions (Revised 1993 Zoning Ordinance)	Potential Regulatory Options
	floodplains, wetlands, steep slopes, ridges, mountainsides, and wildlife habitat” (Section 5-701).	
<p>Protect RSCRs (RSCR Policy 2) that include rivers and streams that drain ≥ 100 acres, associated 100-year floodplains, adjacent steep slopes, and a 50’ management buffer, (see <i>Figure 8 River and Stream Corridor Resources Map</i>)</p> <p>Establish a 100’ stream buffer to protect rivers and streams when floodplains and adjacent steep slopes do not extend beyond either bank by 100’;</p> <p>Establish a 50’ management buffer within the 100’ buffer surrounding floodplains and adjacent steep slopes, with criteria for reductions where needed to avoid adversely impacting the other elements of the RSCR;</p> <p>Establish performance standards and best management practice (BMP) requirements to ensure the health and biological integrity of the river and stream corridors and minimize adverse impacts;</p> <p>Limit uses within the RSCR, with mitigation;</p> <p>Establish a 300’ no-build buffer or the other elements of the RSCR buffer around public water supply reservoirs, Scenic Rivers, the Potomac River, and the Bull Run</p>	<p>Floodplain Overlay District (FOD) conserves the natural state of watercourses and watersheds and includes both Major Floodplain and Minor Floodplain, which are RSCRs.</p> <p>Scenic Creek Valley Buffer (SCVB) (Section 5-1000) applies to RSCRs including scenic rivers and all waterways draining more than 640 acres:</p> <ul style="list-style-type: none"> • 250’ from Potomac River, • 200’ from of Scenic River of Goose and Catoctin Creeks. • 150’ from all other applicable waterways. <p>Reductions of up to 100’ are available for forest retention and BMPs.</p> <p>The SCVB only applies if it exceeds the major 100-year floodplain (the FOD), but the FOD is less restrictive than SCVB. In addition, the SCVB does not directly implement the RSCR as it does not address context of the environmental resources in the riparian corridor (i.e., floodplains, very steep slopes, etc).</p>	<ul style="list-style-type: none"> • Add buffers encompassed by the broader RSCR thresholds • As an alternative, adopt the RSCR policies as development standards with the applicant providing a site-specific evaluation and land disturbance thresholds for the initial 100’ buffer and management buffer. • Consider density increases and lot size reductions or related provisions in the SPA and UPA (if applicable) to minimize the impact of stream buffers on development potential. • Consider strengthening steep slope regulations when associated with river and stream corridor resources. • Consider development standards based on BMPs for uses that propose storage, dispensing, sale or transfer of pollution sources and potential contaminants.

Clallam County, Washington provides an alternative to a minimum 80-acre lot size in conventional subdivisions with densities ranging from 1 dwelling unit per 19.6 acres to 1 per 4.8 acres if 75 percent of the development is preserved as forest. A model “growing Greener” code allows increases in density tied to conservation subdivision design, which is adopted by at least 44 townships in Pennsylvania. Arendt, *Rural by Design: Planning for Town & Country* (American Planning Association, 2015), at 322-323.

Policy	Existing Provisions (Revised 1993 Zoning Ordinance)	Potential Regulatory Options
Develop and maintain standards for activities that propose pollution sources such as the storing and dispensing of fossil fuels, chemical storage, and sale or transfer of potential contaminants.		
Soils and Geologic Resources (SGR)		
Limit density and intensity of development within areas underlain by limestone, especially on sites proximate to karst features.	Limestone Overlay District (LOD) (Section 4-1900) requires a Geophysical Study (pursuant to the FSM) and requires setbacks from karst/sensitive environmental features with development and mitigation standards.	<ul style="list-style-type: none"> Addressed by existing regulations.
Manage and regulate development in mountainside areas using performance standards and regulations and establish ridgeline protection.	Mountainside Development Overlay District (MDOD) (Section 4-1600) limits clearing and establishes performance standards in 3 areas: somewhat sensitive areas, sensitive areas, and highly sensitive areas.	<ul style="list-style-type: none"> Expand the passive recreational uses allowed in the MDOD, such as park sites and use of existing recreational facilities. Consider land disturbance, building height, building design and restrictions on either side of a ridgeline in the new MDOD.⁷
Require special exception approval for the subdivision of properties into three or more lots in Sensitive and Highly Sensitive Mountainside Areas.	See MDOD, above.	<ul style="list-style-type: none"> Add to MDOD
Prohibit land disturbance on naturally occurring very steep slopes (greater than 25% grade and/or soil slope class of E), with limited exceptions.	Steep Slope Standards (Section 5-1508) prohibit land disturbing activities on “Very Steep Slope Areas” (slopes > 25%).	<ul style="list-style-type: none"> Addressed by existing regulations. Add a list of agricultural uses permitted in these areas, and other low impact uses if appropriate (2019 GP (see Chapter 3, SGR Policy 3.3.B)). Consider addressing access issues in the FSM.
Apply performance standards to protect moderately steep slopes (15-25% grade and or soil slope class of D) to include BMPs and locational clearances for	Steep Slope Standards (Section 5-1508) require locational clearance and grading permits and stormwater management BMPs and erosion and sediment control practices.	<ul style="list-style-type: none"> Addressed by existing regulations.

⁷ For sample ordinances, see the Pace Land Use Law Center for Sustainable Development at <https://appsrv.pace.edu/GainingGround/?do=TopicSearch&Topic=74#bottom>.

Policy	Existing Provisions <i>(Revised 1993 Zoning Ordinance)</i>	Potential Regulatory Options
clearing and grading, encouraging development outside of these areas.		
Preserve forests and native vegetation on very steep slopes.	The MDOD establishes clearing limits (Section 4-1600).	<ul style="list-style-type: none"> • Establish clearing limits for steep slopes outside of the MDOD. • Establish limits on clearing of native vegetation on very steep slopes for both MDOD and the steep slope restrictions.
Establish performance standards for unavoidable development on questionable soils as defined by the International Building Code.	Not addressed.	Addressed in FSM.
Forests, Trees, and Vegetation (FTV)		
Develop and adopt a Tree Preservation Ordinance	<p>While Section 5-1300 is partially titled Tree Preservation, it does not require applicants to identify existing trees or tree clusters, protect existing trees, or establish protective measures.</p> <p>Section 5-1400 allows the use of suitable existing vegetation to meet buffer yard planting requirements provided it is subject to a Tree Conservation Plan prepared in accordance with the FSM.</p>	<ul style="list-style-type: none"> • FSM Section 7.300 establishes conservation requirements for voluntary tree preservation. • Continue to evaluate as part of legislative applications. • Establish a list of species requiring protection based on a minimum size (diameter at breast height (DBH)), with minimum canopy requirements pursuant to § 15.2-961 and 15.2-961.1. of the Code of Virginia. • Augment cross-references to FSM.
Require Tree Cover Inventory as part of all development applications with Tree Conservation Plan for Tree Conservation Areas where applicable.	See above.	<ul style="list-style-type: none"> • Address in FSM.
Incentivize and encourage the preservation of existing trees within required landscape buffer areas and for screening of uses.	See above.	<p>Continue to:</p> <ul style="list-style-type: none"> • Credit existing non-invasive vegetation toward planting or buffer area plant units, and • Count tree conservation areas toward required buffers.
Require the removal of invasive plant species during the development process.	Not addressed.	<ul style="list-style-type: none"> • Add to FSM.
Rural Policy Area		
Improve the design of subdivisions and clustered residential development by incorporating natural features and buffering from roadways and scenic byways.	The revised districts referenced in Section III of this report includes recommendations for cluster and conservation subdivision options in the RPA Place Types.	<ul style="list-style-type: none"> • See section III of this report.

Policy	Existing Provisions (Revised 1993 Zoning Ordinance)	Potential Regulatory Options
Evaluate and revise zoning regulations and development standards for rural economy uses that address traffic capacity, safe and adequate road access, number of employees, site design standards (e.g., land disturbance, buffering, use intensity, siting, and architectural features), and public health, safety, and welfare.	See above.	<ul style="list-style-type: none"> • Update and include Additional Regulations for Specific Uses, as well as other regulations, to ensure adequate infrastructure is provided, affects from incompatible uses are sufficiently mitigated, and site design protects the rural historic landscape.
Include new types of rural business and agricultural uses, permit flexibility for the sale of farm products, and promote rural tourism, hospitality uses, and similar kinds of rural business.	The Zoning Ordinance requires rural economy lots in cluster subdivisions. These are used for agricultural and equine enterprises, tourist attractions and services, and land-based commercial businesses that help to sustain. Rural Economy lot standards, uses, and submittals were recently added to AR-1, AR-2, definitions, and FSM.	<ul style="list-style-type: none"> • Addressed by existing regulations. The zoning enabling legislation also addresses rural economy uses such as wineries and breweries. • Consider adding additional uses that support agricultural markets or that support the growing “agrihood” movement where communities are clustered around agricultural uses such as small grocers, shared kitchens, and restaurants.⁸
Adopt zoning regulations and design standards that facilitate the use of existing agricultural and historic structures.	Exceptions for existing standards are established throughout the Zoning Ordinance for existing structures. Some provisions encourage the use of existing structures for certain uses, such as rural corporate retreats (Section 5-619).	<ul style="list-style-type: none"> • Consider adding a comprehensive adaptive reuse supplemental use provision that facilitates the reuse of existing buildings (see section V below). This would include designation procedures along with allowances for parking, landscaping and related provisions. • A new Zoning Ordinance subcategory or section for heritage resources could include these provisions, or a link in enCodePlus.
Maintain zoning regulations and design standards that protect the right to farm.	See cluster provisions referenced in the revised districts (see reference in Section III of this report).	<ul style="list-style-type: none"> • Consider establishing setbacks for residential subdivisions and dwellings from existing farm operations. • Continue the initiative considered by the Board of Supervisors on June 16, 2020 to avoid development on prime agricultural lands and displacing open space with drain fields, requiring a minimum percentage of active agricultural use in prime agricultural land for rural

⁸ *Agrihoods: Cultivating Best Practices* (Urban Land Institute, 2018); *Cultivating Development: Trends and Opportunities at The Intersection of Food and Real Estate* (Urban Land Institute, 2016).

Policy	Existing Provisions (Revised 1993 Zoning Ordinance)	Potential Regulatory Options
		economy lots, and grouping rural economy lots closer together to achieve more usable agricultural space. ⁹
Sustainable Development Practices		
<p>Adopt solar zoning and permitting best practices for accessory use solar development.</p> <p>Support solar farms with locational criteria to be identified.</p> <p>Establish zoning regulations and design standards that permit alternative electrical generation such as wind and solar generation by and for individual users.</p>	<p>Solar power panels are a permitted residential accessory use (Section 5-101(A)(16)). The Board of Supervisors recently endorsed national standards for the use of solar panels and battery technologies for solar photovoltaic (electric energy) projects. However, the Zoning Ordinance currently does not define solar uses or include specific standards for such uses.</p> <p>Regulation of roof-and ground-mounted solar facilities serving individual properties, is limited to the height and setback requirements of the underlying zoning district and provisions related to historic, architectural preservation, and corridor protection requirements. (Code of Virginia § 15.2-2288.7. Local regulation of solar facilities).</p>	<ul style="list-style-type: none"> • Include and define specific use categories for accessory and utility scale solar facilities • The County can deem a solar facility to be substantially in accord with the comprehensive plan according to specified criteria (Code of Virginia § 15.2-2232.H). • The County may include in the Zoning Ordinance reasonable regulations and provisions for a special exception for any solar photovoltaic project, pursuant to Code of Virginia §15.2-2288.8 • The County may include in the Zoning Ordinance provisions to incorporate generally accepted national environmental protection and product safety standards for the use of solar panels and battery technologies for solar photovoltaic (electric energy) projects (Code of Virginia §15.2-2286) • Include standards for solar facilities that are consistent with the Code of Virginia, including both the plan compliance provisions discussed above, and bonding provisions for decommissioning of solar equipment, facilities, or devices (Code of Virginia § 15.2-2241.2). • Include standards consistent with Plan policies for location in the County.

⁹ [*Item # 4. Rural Cluster Development and Prime Agricultural Soil Improvements*](#) (Board of Supervisors Business Meeting, June 16, 2020).

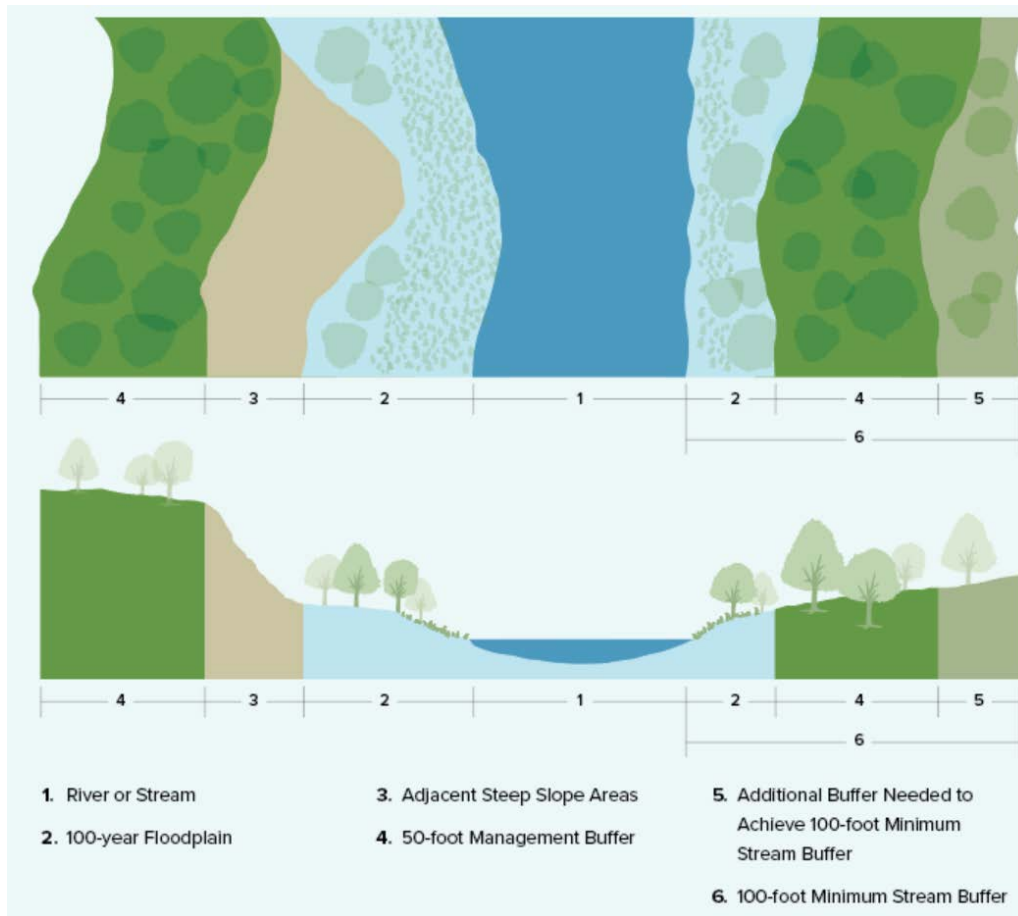


Figure 8 River and Stream Corridor Resources Map (Source: Loudoun County Department of Planning & Zoning)

In addition to the provisions listed above, consider establishing more robust lot size reduction, parking and other modifications from regulations that require applicants to disturb land protected by the plan policies.

Affordable Dwelling Units

Affordable housing is a longstanding issue in Northern Virginia, with the issue becoming more pressing as Loudoun County's UPA and SPA approach buildout. The new zoning ordinance will need to accommodate a variety of housing types to meet future housing demands. With its rapid growth, high household incomes and a housing stock traditionally dominated by single family detached (SFD) homes, affordable housing is an important issue in Loudoun County. Loudoun County is growing rapidly - adding over 204,100 people and 67,600 housing units between 2000 and 2015 – but is not adding sufficient housing to keep up with this demand (2019 GP, at 4-4). While Millennials and Baby Boomers receive attention nationally, families are the leading influence on housing demand in Loudoun County today and the County's household size has increased – contrary to regional trends.¹⁰

¹⁰ Kimley-Horn, *Envision Loudoun Market Study* (January 2018).

By contrast, the Metrorail Silver Line extension and increasing demographic diversity will drive a need for housing options with easy access to services, entertainment, and transit.

Affordable Dwelling Units (ADU) Program. The County uses the regulatory tool, inclusionary zoning, to encourage the production of affordable housing through their ADU Program. The County established the ADU Program in 1993. Loudoun County is subject to enabling legislation that grants broad authority for establishing an inclusionary zoning program, giving it the flexibility to establish broader and more aggressive - or more lenient and flexible - requirements if it chooses (Code of Virginia § 15.2-2304). However, the County currently patterns their ADU Program using the enabling legislation of other narrower statutes (Code of Virginia § 15.2-2305).

Article 7 of the Revised 1993 Zoning Ordinance establishes household income parameters, provides for regulation and administration of the ADU Program, and defines ADUs. The Affordable Dwelling Unit Advisory Board (ADUAB), established by Chapter 1450 of the Codified Ordinances, sets interior ADU specifications, construction costs, and rental and purchase pricing, and makes recommendations to the Board of Supervisors on modification requests (Article 7, Section 7-108(D)). As defined in the purpose statement, ADUs are dwelling units affordable to households at the following ranges, based on household size:

- Purchase: 30-70 percent of the median income for the Washington Primary Metropolitan Statistical Area (PMSA); and
- Rental: 30-50 percent of the median income for the PMSA.

ADU requirements apply to applications on public water or sewer subject to rezoning, special exception, site plan, or preliminary subdivision plat review with at least 24 dwelling units at a density of at least one dwelling unit per 40,000 square feet. The Board of Supervisors approved ZOAM-2017-0001 on June 2, 2020, which revised certain Article 7 standards to increase the provision of ADUs and improve the functionality of Article 7. At the same time, the Board directed staff to evaluate removing an exemption for multi-family structures with 4 or more stories and having an elevator. Pursuant to Article 7, single family (SF) developments are required to provide 12.5 percent of the total number of SF units as ADUs and multifamily (MF) developments are required to provide 6.25 percent of the total number of MF units as ADUS provided the projects meet the applicability requirements and are not exempt. In return, the development may achieve up to a 20 percent or 10 percent density increase, respectively, use reduced development standards, and provide a broader variety of housing types.

Housing Types and Density. In addition to the ADU program, the County may increase the range of residential uses and densities selectively to augment the supply of housing permitted in the zoning ordinance. With the adoption of ZOAM-2017-0001, accessory dwellings are permitted in all zoning districts that allow SF detached (SFD) or SF attached (SFA) dwelling units. Adoption of the 2019 GP added the UPA supporting more MF housing, increased planned density in the SPA and portions of the TPA, but retained current densities in the RPA due to lack of infrastructure and the intent to preserve its rural character. Most of the County's rural and residential districts allow only SFD homes. Three of the residential districts (RC, R-16, and R-24) and three of the planned development districts (PD-TC, PD-TRC, and PD-MUB) allow MF dwelling units. These six districts, as well as R-8, allow SFA dwellings. Together these districts comprise 10,720 acres, or 4 percent of the County's zoning jurisdiction, most of which is permitted and planned for in the Urban and Suburban Planning Areas (except RC, where MF units must occur above non-residential space).

2019 GP Policies. The 2019 GP includes several policies to encourage housing affordability, and to expand the supply and range of housing in the County. The 2019 GP's Housing policies encourage the County to expand the ADU program, approve affordable housing developments by-right, preserve existing housing options, and provide flexibility for density, building height, lot size, lot line, parking, setback, and design standards through the implementation of a planned unit development (PUD) ordinance. The policies call for the zoning ordinance to regulate MF development by FAR instead of traditional density (dwelling units per acre). In addition, the plan calls for form-based approaches for infill and redevelopment areas that facilitate the development of "missing middle" housing product types and affordable prices. This will require revising the use regulations to allow additional housing types by-right where appropriate (discussed in Section V below), establishing more flexible zoning metrics,

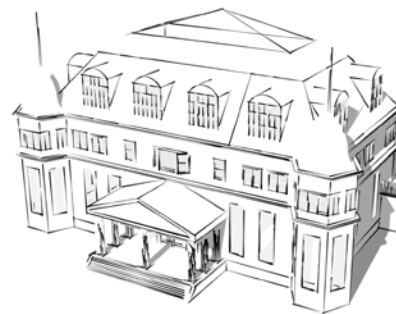
and adding design standards to ensure that the additional density fits its neighborhood context along with incentives for the provision of middle housing types such as duplex, triplex, and quadruplex units.¹¹

Regulatory Tools. The following approaches are based on the 2019 GP Housing Policies and can encourage a broader range of housing types that support Loudoun County’s redevelopment, affordability, and economic development policies:

- **Missing Middle Housing Options.** Some communities have created districts or development options that describe a variety of housing types beyond single- and two-family dwellings such as apartment courts, apartment houses, stacked flats, live-work units, townhouses, micro-units, and cottage or common green (or bungalow court) options. These provide a variety of “missing middle” housing options that can accommodate needed housing types at a scale that is more appropriate to existing, single-family neighborhoods.
- **Permitted Housing Types.** Update the list of permitted housing types and expand the range of uses in the infill and redevelopment areas to include additional forms such as those shown in Figure 9 and [here](https://missingmiddlehousing.com/types). : <https://missingmiddlehousing.com/types>.
- **Design Standards.** Define specific standards for a range of housing types such as building orientation, frontage buildout, entryway spacing, access, open space, building materials, and the location and design of site improvements such as parking facilities.
- **Building Materials.** Requirements for building materials can facilitate the siting of multi-unit homes in neighborhoods that resist them on the grounds of quality and impact on property values.
- **Overlay Districts.** Virginia Beach uses an [overlay district for workforce housing](#). In Virginia Beach, the overlay district includes a site-specific land use plan that supersedes the zoning district regulations and allows a 30 percent density bonus. The project must reserve at least 17 percent of the units as housing for households with an annual income of 40-90 percent of area median income (AMI), or 40-100 percent AMI for buildings with elevators.

Apartment House (or “Big House”)

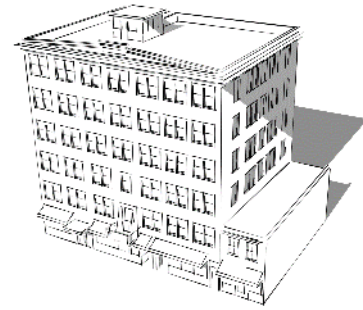
A converted SFD dwelling, or new building with architectural features and massing that are compatible with single-family dwellings, that consists of at least 3 separate dwelling units. This use type is different from a boarding house in that the units are intended for occupancy as permanent residences, and each unit may have separate kitchens and bathroom facilities.



¹¹ Task 4 of this project addresses zoning incentives.

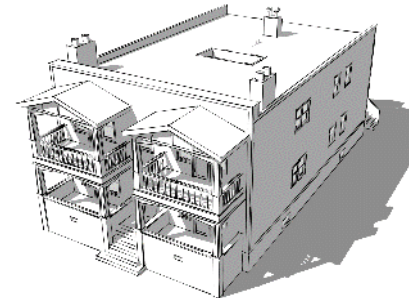
Apartment Hotel

A hotel in which at least 90 percent of the hotel accommodations are available for occupancy by permanent guests.



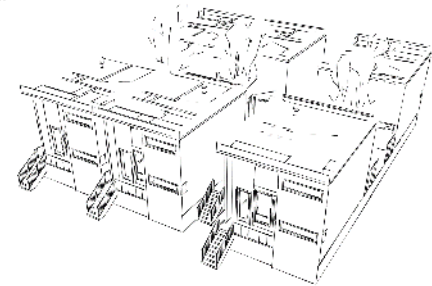
Fourplexes

Apartments with 4 residential units – typically 2 on the ground floor and 2 above, with a shared entry.



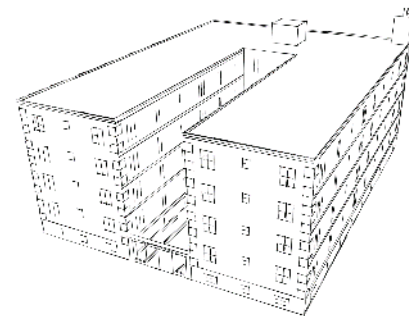
Multiplexes

Apartments with 5-10 side-by-side or stacked units, with either shared or individual entries.



Courtyard apartments

Side-by-side or stacked apartments that open to a shared courtyard.



....Figure 9. Examples of Missing Middle Housing Options

- **Incentives.** Consider a broad range of incentives beyond density, including:
 - increasing building height;
 - reducing setbacks;
 - increasing lot coverage requirements;
 - increasing FAR;
 - reducing civic or open space;
 - waiving required studies for traffic, noise, etc.;
 - modifying buffer requirements;

- modifying occupancy standards to accommodate increased non-related families, group living, and households; and
- eliminating or reducing parking requirements (addressed further in Task 6 of this project).
- **Regulating multi-family development by floor area ratio (FAR) instead of by dwelling units per acre.** The County could apply this approach to walk Place Types, such as Urban Mixed Use, and use traffic impact studies or related project review, with built-in trip reductions to account for internal trip capture and mitigation through pedestrian and transit improvements to address potential concerns about resulting density and project impacts.
- **Allow affordable housing developments as by-right uses.** This could target transit station areas and urban mixed use Place Types where higher densities are appropriate, and offset project costs through streamlined development review.
- **Reduce parking space for development proximate to transit that achieves a continuum of housing types and prices.** Task 6 of this project will explore parking ratios in greater detail.

Building Design

The 2019 GP includes several policies relating to design, embracing both site and building design. Building design is important to maintain long-term economic value for both the site and its neighbors, provide walkable streets, and ensure compatibility for the broader ranges of uses and densities in existing neighborhoods and rural villages set out in the 2019 GP.

How does Loudoun County regulate building design now?

For the most part, the Revised 1993 Zoning Ordinance limits building design regulation to building height and floor area, with some standards applied in planned development regulations or proffered conditions. Some base and planned development districts and uses establish standards for:

- garage placement (JLMA-2, JLMA-3, VCOD);
- internal compatibility regarding building massing, scale, materials, colors, and other architectural features (CLI);
- building orientation to the street (CLI, PD-CC [allows front yard reduction], PD-TC);
- screening of mechanical equipment (Buffering and Screening for all districts, Section 5-1406);
- minimum building height (PD-IP for office buildings, PD-TC, PD-CV, Route 28);
- compatible architectural requirements for parking structures (PD-TC); and
- data centers (Section 5-664).

Planned Development District Standards. Some planned development districts have very general requirements for architectural design. For example, the PD-CV Zoning District (a district which has not been applied) includes the following provision in the Countryside Village area: “[a]ttention should be given to the architectural features, materials, and articulation of building facades. In the Village Neighborhood architectural elements such as porches, roof, and entrance overhangs to define the front entrance of residences are encouraged. In the Village Core, awnings, canopies, trellises and similar architectural features should cantilever over the pedestrian walkway or sidewalk to provide continuous all-weather protection for pedestrians on sidewalks.” This standard provides the advantage of design flexibility. However, they are not binding on the applicant. Even if the standard were binding, it is open to interpretation by both the applicant and the County.

Overlay Standards. The Route 28 Optional Overlay Districts added more precise standards for orientation, massing, frontage types, and building materials in an optional method that allowed for higher intensity and relief from corridor buffer and related requirements. While these optional standards specify development outcomes, applicants have suggested that the regulations are too complicated and the requirements too specific. This may

have discouraged use of the optional method, but underuse of this option may also be related to a lack of market for additional FAR or the entitlements to existing 1972 zoning classifications in the commercial and industrial districts. The County has more leverage outside of the Route 28 Tax District to require higher levels of design to offset increases in density or added flexibility for permitted uses.

What are some alternatives?

- **District Standards.** Composite zoning, form-based codes, or use patterns would incorporate design standards directly into the district requirements and ensure that they reflect the neighborhood context. Composite zoning provides a better model for adapting design concepts to suburban or urban contexts, while form-based codes can provide a framework for applying commercial design standards to urban situations. The Use Patterns concept could also include building design typologies that are part of Place Types that are activated in various zoning districts.
- **Development Standards.** The new zoning regulations could include development standards for site and building design rather than using overlay districts.
- **Missing Middle Housing Types.** Standards could be added for “Missing Middle” housing types (see discussion under “Affordable Dwelling Units” above) to ensure that Loudoun County offers a portfolio of housing types that meet all market sectors.

Site Design

As with building design, the 2019 GP includes several policies relating to site design. Site design has the same purposes as building design. It also ensures the placement of buildings, parking areas, landscaping, stormwater management features, and related site elements that provide a walkable and compact building form in the UPA, central places of the SPA and TPA, and rural villages. In the RPA and where environmental restrictions or natural resources are present, careful site design allows structures, streets, and related infrastructure to cluster and avoid displacement of those features. The County’s policies for Place Types include useful guidelines for site planning in all contexts. These include guidelines for street patterns, block length, building setbacks, parking placement, design amenities, and open space.

How does Loudoun County regulate site design now?

For the most part, the Revised 1993 Zoning Ordinance limits site design regulation to setback and coverage in the more conventional districts, with some standards applied in planned development regulations or proffered conditions. Some base and planned development districts establish standards for:

- maximum block size (PD-TC);
- placement of active uses along block frontages (PD-TC; Route 28);
- minimum frontage buildout (Route 28) to ensure that front building façades occupy the front portion of the lot, rather than using an inverted “L” configuration with frontloaded parking; and
- maximum front yards.

What are some alternatives?

- **Menu Approach.** For open space, the County can consider a menu ranging from passive or naturalized open space types, to urban patterns such as plazas. The Zoning Ordinance could codify that as part of a form-based, composite, or use patterns approach. The standards should ensure that the space is designed and located in a manner appropriate to its context – for example, with plazas for Urban Place Types (such as Urban Mixed Use) and natural open space for Transition or Rural Place Types (such as Transition Large Lot Neighborhood).

Transition Standards

This section evaluates the transitional elements between zoning districts to provide visual separation and to minimize the impacts of higher intensity uses on lower intensity uses.

Transitional techniques common to most zoning regulations include setbacks, landscaped buffers (currently addressed in Section 5-1400), and districts that gradually lower development intensity as they proceed from more intense commercial districts to residential neighborhoods. While landscaped buffers and setbacks provide visual and spatial separation between uses, they can also provide barriers that inhibit connectivity and walkability. For the nonresidential districts or retail centers abutting or near existing residential neighborhoods, the new zoning ordinance could incorporate a development option along with development standards that offer a range of buffer elements. Providing compatible transitions between land uses can enhance connectivity and help create more pedestrian-friendly neighborhoods. Several different types of transition occur within Loudoun County including:

Commercial to residential transition. This typically occurs along corridors, where commercial development, or a form of mixed-use development, is permitted. The typical approach is a development that faces the arterial street, with services positioned along the “rear,” which is usually the edge of a residential neighborhood. Issues related to this type of transition include:

- Mass and scale
- Building character
- Screening service areas
- Lighting
- Emissions and noise
- Traffic

Transition from higher density residential district to lower density residential district. This typically occurs where two different zoning districts abut each other. The concern is the impact of the larger scale construction permitted in the higher density district. Some of the concerns focus on the building form, including its overall mass as well as its shape. Issues related to this type of transition include:

- Mass and scale
- Building character
- Screening service areas
- Parking
- Setbacks
- Open space
- Views and privacy
- Solar access

Transitions in density within a single zoning district. In some situations, the transition occurs within a single zoning district, especially if district standards are updated to allow more density or variety of unit types. When the existing building scale reflects an earlier, lower density, and the new zoning designation permits a higher density, this type of transition occurs. Some identify this as a temporary phase and argue that residents should accept the change. Others suggest that some means of mitigating impacts is still needed. Issues related to this type of transition include:

- Mass and scale
- Building character
- Setbacks
- Open space

- Views and privacy
- Solar access

Planned increase in density and intensity in areas with established lower density SFD neighborhoods and/or large tracts of undeveloped natural landscape (for example planned Transition Compact Neighborhoods and Transition Community Centers in the TPA). In this case, the change in scale can be the greatest of all development scenarios. There are two somewhat conflicting goals, i.e., to promote higher density centers in the community, while respecting older neighborhoods or rural places that were established before the center was proposed. The sensitivity of this transition varies in different parts of the County, in part depending upon the character and age of the abutting neighborhood. Issues related to this type of transition include:

- Mass and scale
- Building character
- Screening service areas
- Parking
- Setbacks
- Open space
- Views and privacy
- Solar access

Because the TPA districts already include a high amount of open space, the retail or mixed-use centers can use these areas to create a visual buffer between rear facing buildings, loading, and storage areas, and other elements and rural areas. Where these areas abut existing neighborhoods, buffer elements can range from traditional landscaping and berms to civic spaces that create both a visual separation but also pedestrian connectivity. Where an existing rural or residential area will be adjacent to smaller lot sizes, reductions in building scale along with lower intensity uses- can provide an effective transition to the existing area.

While addressing a more urban context, the city of [Raleigh's Unified Development Ordinance](#) (see Article 3.5) provides an example of a comprehensive set of transitional features, with lots along the edge of a development divided into zones to regulate the placement of accessory structures such as storage units and dumpsters, parking, and landscaped or natural buffers. Figures 10 – 13 also demonstrate transition methods.



Figure 9. Use and Scale Transition



Figure 10. Traditional Landscaped Transitions



Figure 11. Transitions in Scale



Figure 12. Transition through Pedestrian Connections and Civic Space

V. Use Regulations

This section reviews the amount and types of land uses and how they are permitted, including examination of the special exception uses, use limitations, and the process to address unlisted uses. It proposes assembling land uses of each district into a consolidated table, rather than a separate use list for each district. The table will simplify presentation and improve function, the ability to identify gaps and overlaps, and needed additions or revisions. .

Codifying Uses

The most basic element of conventional zoning is the division of uses by district. Even form-based codes, which deemphasize use regulation, typically include a list of permitted, excluded, and specially regulated uses. Use regulations are important to protect property values, maintain compatibility, and protect neighborhoods.

How does Loudoun County regulate uses now?

Each district regulation includes a list of “permitted” uses. Uses are permitted “by right,” or without special review, or as a major or minor special exception (which requires a public hearing). Most zoning regulations also categorize some uses as “accessory” to other uses. This means that, when a principal use is allowed, the accessory use is also allowed. The current approach to categorizing by right, special, and accessory uses in the Revised 1993 Zoning Ordinance is consistent with best practices. Loudoun County also has an unusual category for “auxiliary” uses. For example, the Commercial Light Industry (CLI) district has performance criteria that allows uses on a “stand-alone basis, if they are auxiliary to the district.” In other words, the use is considered auxiliary to the district rather to the use.

Uses by District. Permitted uses are listed separately in each district regulation. There are 402 separately listed uses in the Revised 1993 Zoning Ordinance. There is an average of 66 permitted uses in each district, but with a high standard deviation. The AR-1, AR-2, and PD-MUB districts allow the highest number of uses (between 106 and 108), while PD-AAAR allows the fewest-with only 23 listed uses.

Number of Uses. While the districts list 402 separate uses, many of these are the same use but with qualifications. For example, day camps with boarding are listed as a special exception in nine districts and is permitted in one district. However, a day camp with boarding that has 30 *or fewer* campers is listed as a separate use and allowed by right in eight districts, while a day camp with boarding that has *more than* 30 campers is listed separately as a minor special exception in two districts and a special exception in four districts. In fact, these three separately listed uses are the same use, but trigger different review requirements in some districts depending on the number of campers. A similar pattern is found with the same use listed different ways, with qualifications such as seating capacity, road access, floor area, or different accessory uses (for example, a convenience store with or without gas pumps). If the 402 uses are collapsed by eliminating qualifications, there are 281 truly discrete uses listed.

Categorizing Uses. In some districts, the uses are listed in random fashion, with no attempt to categorize them (see Figure 14). This is an older way to list uses. The format is legalistic and difficult to read, although it worked fine in 1942 when the County’s regulations were only five pages long. When uses are listed with no attempt to categorize them, the reader must scan the entire list – and perhaps review all the district regulations – to determine whether and where a use is allowed. A more modern and user-friendly way to organize uses is in a table that divides them into categories (see Figure 15). In addition, the table can include cross-references that point the reader to specific standards for that use that occur later in the zoning ordinance. The AR-1 use list is an example. An even more modern trend is to collapse multiple districts with similar uses into a single use table. This both minimizes the length of the ordinance and allows the reader to compare where uses are located throughout the County. Under the current ordinance, the reader needs to turn to each district regulation separately to determine the districts where a use is permitted.

2-302	<p>Permitted Uses. The following uses are permitted in this district:</p> <p>(A) Agriculture, horticulture, forestry, and fishery, pursuant to Section 5-626.</p> <p>(B) Accessory apartment or dwelling unit, pursuant to Section 5-613.</p> <p>(C) Bed and Breakfast Homestay, pursuant to Section 5-601(A).</p> <p>(D) Child care home, pursuant to Section 5-609(A).</p> <p>(E) Cluster development, pursuant to Section 2-305.</p> <p>(F) Equestrian Event Facility, with frontage on a state maintained road, pursuant to Section 5-630.</p> <p>(G) Farm machinery sales and service, pursuant to Section 5-615.</p> <p>(H) Guest farm or ranch, leasing no more than three (3) guest rooms.</p> <p>(I) Guest house, pursuant to Section 5-612.</p> <p>(J) Rural hamlet, pursuant to Section 5-702.</p> <p>(K) Nature preserve, such as but not limited to, wildlife sanctuary, conservation area, and game preserve.</p> <p>(L) Nursery, production, with frontage on a state maintained road, pursuant to Section 5-605.</p> <p>(M) Public or private playground or neighborhood park.</p>	2-303	<p>Section 5-630.</p> <p>(R) Stable, Private.</p> <p>(S) Tenant dwelling, pursuant to Section 5-602(A)(1) and (C).</p> <p>(T) Wayside stand pursuant to Section 5-604.</p> <p>(U) Utility substation, dedicated.</p> <p>(V) Veterinary service.</p> <p>(W) Bus shelter.</p> <p>(X) Commuter parking lot, with less than 50 spaces.</p> <p>(Y) Sewer pumping station.</p> <p>(Z) Feed and Farm Supply Center.</p> <p>(AA) Water pumping station.</p> <p>(BB) Rural corporate retreat, pursuant to Section 5-619.</p> <p>(CC) Pet Farm.</p> <p>(DD) Telecommunications antenna, pursuant to Section 5-618(A).</p> <p>(EE) Telecommunications monopole, pursuant to Section 5-618(B)(1).</p> <p>(FF) Bed and Breakfast Inn, pursuant to Section 5-601(B).</p> <p>(GG) Limited Brewery, pursuant to Section 5-667.</p> <p>Special Exception Uses. The following uses may be approved by the Board of Supervisors and, if approved, may be subject to certain conditions, pursuant to the provisions in Section 6-1300.</p> <p>(A) Airport.</p>
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Figure 13. “Laundry List” of uses in the A-10 district

TABLE 2-102: AR-1 AGRICULTURAL RURAL-1 DISTRICT USE TABLE P = PERMITTED S = SPECIAL EXCEPTION M=MINOR SPECIAL EXCEPTION			
USE CATEGORY	USE TYPE	AR-1 DISTRICT	ADDITIONAL REGULATIONS FOR SPECIFIC USES
PUBLIC AND INSTITUTIONAL USES			
Aviation	Airport/landing strip	S	Section 5-633
Day Care Facilities	Child care home	P	Section 5-609(A)
	Child or adult day care center	S	Section 5-609(B)
Cultural and Government Facilities	Agricultural cultural center	S	Section 5-634
	Fairground	S	Section 5-635
	Structures or uses for local government purposes not otherwise listed in the district	S	
Education	Public School (Elementary, Middle, or High) for fifteen (15) or fewer pupils	S	Section 5-655
	Private School (Elementary, Middle, or High) for more than fifteen (15) pupils	S	
	Private Vocational school	S	
Park and Open Space	Arboretum	P	Section 5-636
	Botanical garden or nature study area	P	Section 5-636
	Cemetery	S	Section 5-637
	Mausoleum	S	Section 5-637

Figure 14. Example of Use Table in AR-1 with use categories and cross-references

What are issues with the current use regulations?

Completeness. The Revised 1993 Zoning Ordinance is lacking a current and comprehensive use list. While a total of 281 uses seems like a long list, the use regulations do not reflect the broad range of contemporary uses that are likely to occur in the community. For example, the 2017 North American Industrial Classification System (NAICS)

includes 1,059 separately listed 6-digit use codes categorized in 20 broad categories. The use table will need to classify most uses in broader use categories. The uses should also be audited to ensure there is a place for all businesses, service agencies, and residential categories the community needs.

Unlisted Uses. Where uses are not listed, Loudoun County’s Zoning Administrator currently makes an administrative determination whether the use meets the definition of one of the listed uses and/or whether the use is permitted in a zoning district. Applicants can appeal this determination to the Board of Zoning Appeals (BZA). The determination process creates uncertainty for applicants and possibly requires the commitment of staff and agency time to conduct a public hearing if appealed to the BZA (and, in the worst-case scenario, defend a lawsuit). Provisions for this process are also not included in the current zoning regulations.

Recommendations to improve the regulation of uses?

Update Uses using Industry Classifications. The County should audit the uses against modern industry classifications (such as the NAICS and the American Planning Association’s Land-Based Classification Standards [LBCS]) to ensure that all known uses are accounted for in the use lists and the definitions. The listing of uses should be completely reviewed to make sure they are up to date. The listing of uses should include broad categories, but with specific definitions that consolidate similar specific uses in a logical fashion.

Create a Use Matrix. Uses can appear in each zoning district regulation or consolidated in a matrix format. Listing all permitted, special exception, and accessory uses in each zoning district minimizes the need to cross-reference other parts of the zoning regulations, but it makes the regulations longer because uses permitted in multiple districts are repeated throughout the document. An applicant or reader who wants to know where and how a use is allowed must also read through multiple district regulations (although the enCodePlus web-based platform will make it easier to search the ordinance for uses using keywords).

Modern best practice is to consolidate the uses into a single table or use matrix. The table organizes the uses by category (such as Residential, Group Living, Commercial, and Industrial) and indicates where the uses are allowed, and whether they are permitted by right or as a special or accessory use. The use table can combine similar uses and eliminate obsolete uses. It can indicate whether a given use is allowed only when it is accessory to a listed principal use and could eliminate the confusing “auxiliary” classification by simply allowing those uses subject to performance standards. Combining uses into a table allows the reader to look in one place to see where uses are allowed. Visual aids can also facilitate reading and understanding of the use table. For example, a recent zoning update for Sparks, Nevada color-codes the [use table](#) to match the zoning map.

A comprehensive use table also makes it easier to track inconsistencies in uses and ensure that all uses are appropriately defined. It simplifies the process of maintaining and updating the list of uses. Readers and planning staff can quickly scan categories of uses to determine whether something is missing. Planning staff can refer to the use categories to determine whether unlisted uses are allowed in the district. It facilitates the process of comparing use definitions and collapsing uses to eliminate arbitrary distinctions (such as having to install a service counter so that a use is considered a restaurant rather than a bar).

Unlisted Uses. The zoning regulations should establish a process for the Zoning Administrator to determine whether and how unlisted uses are permitted. This would include rules for determining whether an unlisted use simply falls within the definition of a permitted use and whether unlisted uses are permitted as part of the same industry or use category. For example, the current Route 28 Corridor Overlay regulations include an interpretation process for unlisted uses with references to the NAICS and LBCS. This would also include a tracking procedure for rulings for unlisted uses and for zoning ordinance amendments to update the use table. The use table could

Sample use definition:

Personal instructional services: The provision of instructional services such as tutoring and exam preparation, language, photography, fine arts, crafts, dance or music studios, art studios, driving schools, employment training, diet centers, and beauty schools / reducing salons. This includes ... light assembly and offices relating to training or instruction.” (Sparks, Nevada Zoning Code)

This definition both defines the use and provides examples of the use. The code administrator can also refer to the NAICS or LBCS documents if further explanation of the used characteristics is needed. By giving examples, the definition captures most of the specific uses in the category, while allowing the planning staff to easily determine whether unlisted uses are included.

Figure 15 Sample Use Definition

also indicate whether the use is subject to additional regulations and provide a cross-reference to the applicable regulations. In enCodePlus this cross reference can be linked to the additional regulations.

Supplemental and Additional Use Regulations

As recommended in the Organization section, the zoning ordinance should include a separate Article devoted to regulations for individual uses. These can range from those with nuisance type impacts (such as landfills), community character issues, and special legal protections (such as cell towers, group homes and churches). The Revised 1993 Zoning Ordinance currently codifies supplemental use regulations in Section 5-600 (Additional Regulations for Specific Uses), which is over 100 pages in length. In addition, supplemental use regulations are found in Sections 5-100 (Accessory Uses and Structures), 5-400 (Home Occupations), 5-500 (Temporary Uses/Zoning Permits) and 5-800 (Vehicles in Residential Districts). These sections warrant a review to ensure that the standards reflect best practices, and to minimize the need to develop case-by-case conditions through public hearings and special use permits.

VI. Administration

How do the current processes work?

Article 6 consolidates the zoning development review requirements. This begins with material that establishes the boards and commissions involved in development review, and includes the Planning Commission, Board of Zoning Appeals, and Historic District Review Committee.

Processes range from legislative processes such as comprehensive plan amendments, rezonings, special exceptions, and variances to administrative processes, such as site plan and zoning permit approvals.

The County's planned development process includes an unusual procedure for legislative approval of a PD district that is administered as another base or planned district. For example, PD-H provides for the approved Concept Development Plan for the district to designate "land bays" to develop for residential uses pursuant to PD-H3 Low Density (R-1, R-2, and R-3), PD-H4 Medium Density (R-4 and R-8), or PD-H6 High Density (R-16 and R-24) district regulations, including the maximum size of the land bay and number of units per land bay. Land bays are also designated for office, commercial and industrial uses. Residential uses in the PD-H follow the requirements for the residential (R-1, R-2, R-3, R-4, R-8, R-16, or R-24) zoning districts, and the non-residential uses follow the requirements for the PD-CC, PD-OP, or PD-IP districts, as designated on the preliminary subdivision plan (Section 4-104(C)). Land bays are referenced throughout the district regulations for purposes of applying setbacks (for example, a 50-foot setback for continuing care facilities from land bays allowing non-residential uses in Section 3-900(P)(3)(b)) and other regulations.

What are the general issues with development processes?

Development processes should be streamlined, avoiding wasteful and time-consuming procedural steps. The modern best practice is to assign as many processes as possible to administrative staff when public hearings are not necessary. Public hearings are not necessary when a use is subject to very clear regulations defined in the ordinance (leaving no room for interpretation or discretion), or where the application is the final step in multi-step approval processes where discretionary decisions have already been made.

The revised zoning districts presented in Section III of this report, along with codifying supplemental use regulations for uses that require special exception review, would streamline the development review process and provide a more efficient workflow. As is discussed in Section II of this report, composite zoning and other concepts would codify design standards while allowing for rezoning where needed to negotiate conditions that mitigate the impacts of increased development.

Where development has unique impacts or impacts that are incapable of resolving completely through development standards, public hearings may be required to ensure that neighborhoods have an opportunity to weigh in on applications that affect them. Even without public hearings, the ordinance can require neighborhood meetings to sort through issues that could otherwise become the topic of a variance request or third-party lawsuit challenging the application.

How can Loudoun County improve its zoning processes?

- **Summary Table.** At the beginning of the process Article, insert a summary table or flow chart showing clear lines of authority, notice requirements, and decision-making authority.
- **General versus Specific Workflows.** Establish separate divisions for general procedures (such as notice), and individual workflows for each process (such as zoning amendments).
- **Neighborhood Meetings.** Require neighborhood meetings for rezonings, comprehensive plan amendments, preliminary subdivision plats, special use permits, and variances. This would apply to uses that have adjacency and compatibility issues, such as a commercial project adjacent to a residential

neighborhood (but not a commercial project surrounded by other commercial uses). For uses with unique neighborhood impacts, consider a neighborhood premeeting on every application. Map each process with a common workflow, beginning with applicability, and continuing to initiation and completeness, decision making appeals, and the scope of approval.

- **Removing Clutter.** The procedures section should focus on the general and specific application workflows. The new zoning ordinance can make this section concise and to the point by:
 - Moving the contents of Division A (Sections 6-100 to 6-300) establishing boards and commissions to a separate Article. Since this Article is technical and not referred to often by administrators or applicants, move it to a later point in the ordinance. Wherever possible, simply cross reference to the zoning enabling legislation where it establishes the details for appointment, membership, jurisdiction, or other matters. In addition, include provisions for the DPZ and Zoning Administrator.
 - Moving the contents of Division B relating to enforcement to a separate article. Enforcement moves on a separate track from permitting, and again should appear near the end of the new zoning ordinance.
 - Consolidating the number of planned development districts to a single or a few catchall processes for unusual and rare situations.
- **Special Exceptions.** Establish detailed additional regulations and standards for special exceptions uses and reclassify them as permitted uses where possible.
- **Submittal Requirements.** Provide comprehensive submittal requirements, as discussed in Section II “Organization” of this report. With the Place Type approach focusing development review on a project’s form and function rather than discrete land use considerations, it is critical for DPZ staff to understand how a proposed project requiring legislative approval will achieve the anticipated design. This level of review is not possible when rezoning applications include conceptual or “bubble” plans without design guidelines or similar materials demonstrating consistency with the 2019 GP. When applicants provide these materials later in the review process, it extends application review time and complicates staff’s review and recommendations to decision-makers. Therefore, providing guidelines and project design information should be a comprehensive checklist submittal requirement to facilitate development review.
- **Land Bays.** Regardless of the approach chosen, master planned projects may continue to show “land bays” as is done under the current PD regulations. However, the designations could become less specific about uses, and designate land bays for building forms, civic spaces, and related items. In this case, the approval would not identify a base or planned development districts for the land bays but rather, land uses, dimensional, and design standards associated with the Place Type.

VII. Conclusion

The new zoning ordinance will become a key tool for implementing the *Loudoun County* 2019 GP. While the existing Revised 1993 Zoning Ordinance has some effective provisions, it requires significant updates to fully realize Loudoun County's planning goals and objectives. In addition, further reorganizing, rewriting, and illustrating existing and revised zoning requirements will make the document easier to read, and potentially create a higher quality of public discourse and design quality.

This report is one step in a lengthy process. Loudoun County should continue to conduct public outreach to solicit public comments on this report, Loudoun County's existing and potential strategies for regulating development, and key neighborhood compatibility, economic development, and sustainability goals. We look forward to continuing to work with Loudoun County on this important process.