



Agenda
UDO Steering Committee
Thursday, December 17, 2020
12:00 PM

Item	Topic
Join Zoom Meeting	https://us02web.zoom.us/j/82920363624?pwd=OFhkaXpuL3kxL0JmTmFEUm4zQ3lNdz09
Meeting ID: 829 2036 3624	Passcode: 267263
1.	Call to order
2.	Review and Approve the November 19, 2020, committee meeting minutes
3.	Review Sections
	<ul style="list-style-type: none">a. 6.6 Lighting - Continued reviewb. 6.3.1 Open Space – New reviewc. 6.3.2 Buffering – New reviewd. 6.3.4 Landscape Standards – New review
4.	Next meeting date: January 21, 2021
5.	Adjournment

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Steering Committee Meeting Minutes

Date: Thursday, November 19, 2020

Time: 12:01 p.m.

In Attendance

Mayor Ronnie Currin

Town Commissioner Jackie Wilson

Planning Board Vice-Chair Mike Moss

Econ. Dev. Mgr. Mical McFarland

Planner II Julie Spriggs

Rolesville Chamber Member Brad Walker

Timothy Nau

Mayor Pro Tem Michelle Medley

Town Manager Kelly Arnold

Planning Board Member Davion Cross

Planning Director Danny Johnson

Kimley Horn Consultant James Ehrmann

Parks & Rec Advisory Board Derek Versteegen

Andy Ammons

Absent

Jeff Wollhueter, Planning Dev. Spec. Shelly Raby

Call to order

Town Manager Kelly Arnold welcomed everyone in attendance and thanked them for their participation.

Meeting Minutes

The meeting minutes from October 29, 2020, were approved with no corrections. Mayor Currin questioned if the minutes will be posted on our website. Mr. Arnold replied after they are approved they will be uploaded. Mr. McFarland shared [What's New? Plans in Progress](#) Section on our website (found under the planning page) where the approved minutes and meeting video will be available for the public.

Review of Meeting Schedule

Mr. Arnold reviewed the results of the poll, and meetings will be held on the third Thursday of the month at noon. Ms. Spriggs has emailed calendar invites. Please let her know if you did not receive an invite.

Review of Sections 6.5 Fences and Walls and 6.6 Lighting

Mr. Wilson and Ms. Medley requested any changes be highlighted for easier readability.

Ms. Spriggs summarized the changes.

Ms. Medley raised a concern that neon lighting will not be allowed pertaining to open business signs. Ms. Spriggs and Mr. Johnson clarified and reviewed what is currently under our UDO, noting that flashing signs are a vehicle distraction, which is a concern.

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Commissioner Wilson asked if anyone that currently has these types of signs are grandfathered in? Mr. Johnson replied that would be reviewed later under the non-conforming section.

Mr. Versteegen asked if the concern is flashing lights during the night or day? Mr. Johnson replied the concern is driver distraction and safety.

Mr. Arnold asked about patio lights at residences. Mr. Johnson replied those lights would be exempt from this ordinance and are allowed in a single-family or a two-family. Mr. Wilson would like to add apartments and townhomes or multi-family to the ordinance as exempted also. Mr. Arnold raised the question about commercial patio lighting. Mr. Johnson replied it would need to be in the lighting plan. This will also be discussed later.

Mr. Arnold questioned grand opening spotlights, and if they would be allowed. Mr. Johnson replied no that would be a change to our current ordinance. Mr. Arnold, Mr. Wilson, and Ms. Medley would like to work on changing that to ensure the possibility of a "limited time use" at special events are possible. Mr. Cross suggested changing the wording for spotlights and stating "limited to special events and holidays". Lighting standards continued, a table was added to simplify, and permissive language was removed.

Mr. Arnold questioned the callouts for two different documents and asked if those were standard where he could pick up a UDO anywhere in North America. So if he was a vendor, would he know those standards? Mr. Johnson replied regarding the Athletic Field lighting, the Illuminating Engineering Society of North America is a national standard. He was unfamiliar with the other one. Mr. Ehrmann with Kimley Horn noted those are standards that they are seeing more and more of, and they can provide more information on how this is becoming a best practice and is commonly found on Google. The design principles should be there.

Collectively there was a question about adding a nuisance ordinance for lighting under Table 6.6 Specific Lighting Standards for single-family properties. Mr. Johnson noted we are getting into the area of architectural control under the state statute, noting we cannot regulate architectural regulations. Mr. Wilson and Mr. Arnold would like some research conducted and another review at the next meeting regarding lighting. Ms. Spriggs will send some information on footcandles before the next meeting to review. Mr. Moss asked if the town has a footcandle meter? Mr. Johnson replied no. Mr. Arnold noted that does raise the question of how do we enforce this?

Town Center Zoning District Amendment update Mr. Arnold noted some sections have gone live. Planning Board members will be asked to review a section from the developer, as they will be in attendance Monday night to review.

Next Meeting: Thursday, December 17, 2020, 12:00 pm.- 1:30 pm.

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Memorandum

TO: UDO Steering Committee
FROM: Julie Spriggs, GISP, CFM, CZO, Planner II
DATE: November 16, 2020
RE: Item 3 Review of Sections

Included in your packet is the revised sections for Lighting. Please look for the yellow highlighted text as these sections were revised based upon comments made during our meeting on November 19, 2020. You should have received an email earlier this week explaining lumes and footcandles, and why footcandles are used as a design standard. Keeping the additions to the exemption categories in mind, we'll discuss Table 6.6 for refinement.

Section 6.3.1 Open Space is a first-time read for the steering committee. Please review this section for the following discussion points:

1. Is the text easy to follow and understand?
2. Do the charts and graphics match the descriptions and are they ease to understand what they represent?
3. Is there a topic you expected to see covered in this section that was missing?
4. Is there a topic covered that would be better served from another section of the ordinance?
5. Please skip over the greenways section 6.3.1.J. We will be refining this language with other plans and policies, advisory boards, and staff before finalizing this language for review.

Section 6.3.2 Buffering is a first-time for the steering committee. Please review this section as you did the previous section with points 1-4 above in mind.

5. Table 6.3.2.2 is included as a reference for now. As we have not yet discussed zoning districts, this is a placeholder until we do. Included in the table is a breakdown of required buffer types. While discussion based on zoning needs to wait, we can discuss whether the chart gives the information in a clear manner and is easily understood.

Section 6.3.4 Landscaping Standards is also a first-time review fo the steering committee. Please review this section as you did the previous section with points 1-4 above in mind.

5. 6.3.4.4 Parking Lanscaping has new concepts proposed for the town. Do you like the proposed text and graphics in 6.3.4.4.D – F for plantings on islands, medians, and perimeters?

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6.6. LIGHTING (GROUP 1)

* Updated Section after comments from staff and committee.

*11/19: Updated Section with comments from committee after 11/19 meeting; will await additional comments from Julie. Moving forward, provide all underline strike through for updated versions.

- A. **Purpose and Intent.** The purpose of this Section is to regulate the intensity of exterior lighting for all types of buildings, individual lots and developments. This Section intends to provide standards to prevent light from excessively illuminating other properties and street rights-of-way, minimize glare, reduce light pollution, protect the night skies, and to minimize other adverse impacts from light intensity.
- B. **Applicability.** All new development shall comply with the standards of this Section. The following shall also apply in instances of repairs, renovations or additions:
1. **Minor.** When a site area is improved by 10% or less, lighting subject to the standards of this Section is required only for the additional improved site area.
 2. **Major.** When a site area is improved by greater than 10%, both the additional area and existing area must conform to the lighting standards in this LDO.
- C. **Nonconforming Lighting.** Lighting that does not comply with the standards of this Section that was permitted before the adoption date of this LDO shall be considered nonconforming. Any modifications or replacement of such lighting shall conform to this LDO, subject to 6.6.B.
- D. **Exemptions.** The following are exempt from the standards of this Section:
1. Residential lighting that is not part of a site plan or subdivision plan, for single-family (detached and attached), two-family dwellings, or multiple family dwellings such as apartments or condos;
 2. Security lighting required for public spaces consistent with *Crime Prevention Through Environmental Design* (CPTED) or similar safety requirements;
 3. Lighting for permitted temporary uses, including grand openings, special events and celebrations;
 4. Holiday displays;
 5. FAA-required lighting on buildings and telecommunication towers;

6. Public street lighting;
7. Temporary lighting for construction work and/or emergency personnel;
8. Lighting for flags; and
9. Underwater lighting used for swimming pools and/or fountains.

E. Prohibited Lighting.

1. **Awning/Canopy Lighting.** Awnings and canopies used for building accents, such as over doors and windows, shall not be internally lit, i.e., from underneath or behind the awnings and canopies. Gas stations are exempt from this standard (see Section 6.6.M: Gas Station Lighting).
2. **Flashing Lights.** Lights that flash, move, rotate, blink, flicker, vary in intensity, or color, or use intermittent electrical pulses are prohibited. Such techniques used for signs internal to a building, behind windows is exempt.
3. **Floodlights.** Floodlights, spotlights, or any other similar lighting shall not be used to illuminate buildings or other site features unless approved as an integral architectural element on the site plan or as a permitted temporary use (such as spotlights for grand openings or celebrations).
4. **Tube Lighting.** Tube lighting in the form of neon or rope lighting is prohibited on building exteriors and along façade trims where it defines a window, door, or elevation. The utilization of tube lighting behind windows is exempt.
5. **Traffic Control.** Lighting that is similar or can be confused as being a traffic control device.

- F. Review and Lighting Plan.** All development subject to the standards of this Section shall require a lighting plan. Plans shall be reviewed for compliance during the site plan and/or subdivision process. Before a certificate of occupancy is issued, the applicant shall supply the Town with a final letter of certification from the lighting engineer and/or manufacturer verifying that all site lighting is installed according to Town standards, the approved plans, and any applicable conditions. Lighting plans, at minimum, shall comply with the following:

1. **Licensed Engineer.**

- a. The plan must be prepared by a licensed engineer;
 - b. Shall be signed and sealed; and
 - c. Shall be of an engineered scale that is easily legible.
2. **Plan Requirements.** To facilitate dark-sky provisions, appropriate source light shielding is required in order to minimize glare and protect dark skies, while facilitating better vision at night. A lighting plan must show:
- a. All proposed and existing buildings on the site;
 - b. Pedestrian and vehicular areas;
 - c. Other above-ground improvements;
 - d. The horizontal location of all proposed and existing outdoor lighting fixtures, including pole and wall-mounted fixtures;
 - e. Mounting heights of each fixture;
 - f. Overall height of each pole above grade;
 - g. Fixture details;
 - h. Location of externally illuminated signs and associated fixtures; and
 - i. The location of all architectural and landscape lighting fixtures.
3. **Illumination Values.**
- a. Lighting plans shall be specified and calculated in maintained footcandles (FC), unless specified otherwise in this Section. Measurements of light levels shall be taken at finished grade with an accurate and calibrated light meter.
 - b. The plan must include a footcandle plan that provides typical footcandle contours and a point photometric grid that indicates footcandle levels measured at grade across the site. Maximum, average and minimum site foot-candles, uniformity ratio (average and minimum), and depreciation factors also are required. The plan must show initial horizontal illuminance values in foot-candles for the area to be

illuminated.

- c. These values must be calculated at grade and include contributions from all onsite fixtures.
 - d. The plan must plot foot-candles of illumination at ground level to the nearest tenth of a foot-candle, and at horizontal grid intervals of no more than ten feet.
 - e. The plan shall show illumination level at the lot line (or perimeter of a development, if applicable) to ensure maximum illumination levels are not exceeded.
4. The manufacturer's cut sheets (specifications) for each proposed fixture must be submitted.
 5. A lighting fixture schedule that presents the following information:
 - a. Fixture type, including the manufacturer's product identification catalog number.
 - b. Fixture mounting height.

G. General Design Standards.

1. All lighting fixtures shall be constructed and designed to prevent light from emitting upwards toward the dark night sky.
2. All fixtures, except for streetlighting fixtures, including security lighting, must be cutoff fixtures. Cutoff fixtures shall project all its light in a downward motion.
3. Canopy lighting fixtures shall be designed to be completely recessed within the canopy.
4. All fixtures must be incorporated into the building or site as an integrated design element through the use of common or complementary style, material, and color.
5. Interior fixtures used to light the interior of parking garages must be shielded to prevent light spilling from the garage.
6. Light fixtures on the top deck of a parking garage may not exceed 15 feet in

height and must be shielded to prevent light spilling from the boundary of the garage deck. Rooftop lighting of parking garages must be setback a minimum 15 feet from the perimeter of the rooftop parking structure.

7. Lighting for permitted rooftop uses (such as a restaurant or lounge) shall be pedestrian in scale and not exceed 12 feet in height (this does not include any FAA mandated lighting). Rooftop lighting fixtures used for permitted rooftop uses shall be located toward the center of the rooftop, away from its edges and not face outward. Safety lighting may be utilized along walls or rails. All lighting shall be designed to effectively eliminate glare, shielded to prevent light spilling over the side of the building, and shall be turned off when the rooftop area is not in use.
8. Walkways, bikeways, parks and trail lighting, and pedestrian facilities such as building connections shall be lit at a maximum 0.2 FC.
9. Wall packs on buildings may be used at entrances to a building or to light potentially unsafe areas. They should not be intended to draw attention to the building or provide general building or site lighting. Wall packs shall be fully shielded, cutoff type fixtures with concealed light sources. The lighting must be directed downward.
10. Loading/unloading docks shall only be illuminated by fixtures which feature full cutoff design and shall be affixed to an outside building wall or pole.
11. All outdoor lighting fixtures not mounted on buildings (i.e. ground based) shall be located a minimum of 10 feet from a property line or right-of-way line and should be no closer than 2 feet from any required perimeter or streetscape buffer. Undergrounding service is encouraged.
12. Light fixtures shall not exceed 30 feet in height in vehicle use areas (such as rights-of-way and parking areas). Additional standards for parking areas are defined in Section 6.6.J.
13. Light fixtures shall be 12-15 feet in height in nonvehicular pedestrian areas (such as sidewalks).
14. An illustrative example of permitted light fixture heights is provided in Figure

6.6.1

Figure 6.6.1. Lighting Fixture Height Illustrative Example



H. Lighting Intensity Standards.

1. Table 6.6: Specific Lighting Standards, defines specific standards for lighting intensity based upon the use involved.
2. The table is organized by uses and permitted maximum values are presented in allowable foot-candles (FC). Maximum illumination is required to be maintained (measured horizontally) at grade and is to be averaged throughout the site to avoid hot spots and ensure illumination values at the edge of the development area.
3. Illumination shall not exceed the maximum illumination permitted at the edge of any lot line (i.e. property line), unless permitted elsewhere in this LDO.
4. Where a single development occupies multiple lots, the maximum illumination shall be required around the perimeter of the development.

Table 6.6. Specific Lighting Standards

Use	Maximum Illumination at Property Line
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Single-Family/Two-Family Residential	1.0 FC
Multiple Family Residential	1.5 FC
Mixed-Use Developments	2.5 FC
Civic Uses (See Permitted Principal Use Table)	6.0 FC
Commercial Uses (See Permitted Principal Use Table)	5.0 FC
Office Uses (See Permitted Principal Use Table)	5.0 FC
Industrial Uses (See Permitted Principal Use Table)	2.0 FC
Infrastructure Uses (See Permitted Principal Use Table)	2.0 FC
Residential Sidewalks	0.3 FC
Non-Residential Sidewalks	0.8 FC
Vehicle Use Areas	1.0 FC
Primary Entrances	5.0 FC at entrance
Secondary Entrances	1.0 FC at entrance
Loading Docks	15.0 FC at loading dock
Storage Areas (Active)	5.0 FC
Storage Areas (Inactive)	1.0 FC

- I. **External Building Lighting Standards.** External building lighting shall comply with the following standards:
1. Fixtures that decoratively light a building or wall may not light above the parapet of the building or the top of the wall.
 2. Landscape and decorative lights are hereby made exempt from this subsection.
 3. Floodlights, spotlights, or any other similar lighting shall not be used to illuminate buildings or other site features unless approved as an integral architectural element on the development plan.
 4. On-site lighting may be used to accent architectural elements but not used to illuminate entire portions of building(s) or sign(s).

5. Where accent lighting is used, the maximum illumination on any vertical surface or angular roof surface shall not exceed 5.0 FC.
 6. Building façade and accent lighting will not be approved unless the light fixtures are carefully selected, located, aimed, and shielded so that light is directed only onto the building façade and spillover light is negligible.
- J. **Parking Area Lighting Standards.** Lighting is required within parking areas. The height of light fixtures within a parking area shall comply with the following standards:
1. Parking area lighting fixtures shall be required to stagger the heights of light fixtures so that the tallest fixtures are in the center of the parking lot, and the lowest heights are at the perimeter of the parking lot.
 2. Light fixtures height shall not exceed 30 feet within the center of a parking area and shall decrease height to 12 to 15 feet at the boundary of the parking area.
 3. To avoid conflict in layout, parking lot lighting must be coordinated with parking area landscaping.
 4. Lighting design shall be coordinated with the landscape plan to ensure that vegetation growth will not substantially impair the intended illumination.

Figure 6.6.2 Parking Area Lighting Standards Illustrative Example



- K. **Sign Lighting Standards.** All external lighting for signs shall be designed and located to assure there is no spillover light. Sign lighting, including ground mounted stop lights,

shall not exceed 5.0 FC. Signs shall be in compliance with Section 6.2: Signs.

L. **Athletic Field Lighting Standards.** Lighting for athletic fields may be in excess of permitted fixture heights and illumination levels. Recreation lighting levels established by *Illuminating Engineering Society of North America (IESNA)* are to be used as the standard for all athletic field lighting. Higher lighting levels for tournament or high league play are sometimes required and must be approved by the Land Development Administrator or their designee. All sports fields, areas, or courts must meet the following minimum standards:

1. Fixtures must be fitted with manufacturer's glare control package.
2. Lighting shall be turned off no later than one hour after any event ends.
3. Fixtures must be designed with a sharp cutoff and aimed so that their beams fall within the primary playing area and the immediate surroundings, so that off-site direct illumination is significantly restricted.
4. Sports fields may have lighting fixtures a maximum 80 feet in height.
5. Spillover levels at the field property lines shall not exceed 0.3 foot-candles.

M. **Gas Station Lighting.**

1. All light fixtures for gas stations that are mounted on the lower surface of canopies must be fully shielded in and of themselves (canopy edges do not qualify as shielding).
2. Light fixtures mounted on canopies shall be recessed so that lens cover is recessed or flush with the bottom surface (ceiling) of the canopy or shielded by the fixture or the edge of the canopy so that light is restrained to seventy degrees (70°) or less from vertical.
3. Lighting levels shall be no greater than 12.0 FC at the edge of the canopy.
4. Areas outside service station pump island canopy shall be illuminated so that the maximum horizontal luminance at grade level is no more than 10.0 FC.

DRAFT

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6.3. OPEN SPACE, BUFFERING, COMPATIBILITY AND LANDSCAPING (GROUP 1)

6.3.1. OPEN SPACE

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***Editorial Note:** Dropped in most recent version, 11-23, into this master draft.

- A. **Purpose and Intent.** The purpose of this Section is to require open space that encourages preservation of natural features, adds to the visual character of a development, and provides active and passive recreational opportunities for residents and visitors alike. Open space is an asset to the community and it is the intent of this Section to:
1. Define standards in which new development shall dedicate a portion of area(s) as open space;
 2. Designate minimum open space requirements, open space size, open space types, and open space design standards;
 3. Define the minimum maintenance and ownership requirements for open spaces.
 4. Promote open space accessible to the public in new developments; and
 5. Expand development of greenways and connectivity between both built-up and fallow open spaces across Town.
- B. **Applicability.** All new development shall comply with the standards of this Section. The following shall also apply in instances of repairs, renovations or additions, or change in use. No permit for construction of any building, structure or use may be issued until open space has been provided in accordance with this LDO.
1. **Repair or Renovation.** A building may be repaired or renovated without requiring open space per the requirements of this LDO provided there is no increase in gross floor area.
 2. **Minor.** When a building or site is increased in gross floor area or improved site area by 10% or less, open space is required only for the additional floor area or improved site area. Improved site area shall include site improvements such as utility installations, landscape modifications, additional impervious surfaces (including parking), and/or construction of structures.

3. **Major.** When a building or site is increased in gross floor area or improved site area by greater than 10%, open space must be provided for the total of the entire property. Improved site area shall include site improvements such as utility installations, landscape modifications, additional impervious surfaces (including parking), and/or construction of structures.
4. **Change in Use.** A change in use shall not require compliance with this Section.

C. Exemptions.

1. **Single-Family.** Development or redevelopment of individual single-family dwellings not part of a subdivision approval is exempt from the standards of this Section.
2. **Town Center (TC) District.** Recognizing the importance of the continued development of the Town Center (TC) district, any development or redevelopment within the TC district which cannot meet the open space requirements of this Section due to size constraints (i.e. size of lot) or parcel configuration may request a variance exempting the open space requirements of this Section.

D. Minimum Open Space Required. The minimum amount of open space required in a development shall be in accordance with this Section, however a development may provide more than the minimum required open space. Gross square footage of open space area shall be used in the calculation of open space percentage requirements. Vehicle use areas, streets, driveways, and sidewalks required per this LDO may not be used toward open space calculations unless explicitly stated in this Section.

1. **Residential Districts.** All new development subject to this Section within residential districts as defined in Section 3.1.1: Residential Districts, shall require minimum 10% open space, calculated from the total size of the development. The required 10% open space shall also comply with the following additional standards:
 - a. **Developments of 0-50 Acres.** For residential developments 0 to 50 acres in size, required open space shall include at least one small open space type and one medium open space type, as defined in this Section. If the

residential development is less than 10 acres in size it shall only require one small open space type.

- b. **Developments Greater Than 50 Acres.** For residential developments greater than 50 acres in size, required open space shall include at least one small or medium open space type and one large open space type, or shall include one small open space type and two medium open space types. At least 50% of dwelling units must be within ½ mile of a medium or large park.

2. **Mixed-Use Districts.** All new development subject to this Section within mixed-use districts as defined in Section 3.4: Mixed-Use Districts, shall require a minimum 15% open space, calculated from the total size of the development. The required 15% open space shall also comply with the following additional standards:

- a. **Less Than 25 Acres.** For mixed-use developments less than 25 acres, required open space shall include at least two small open space types.
- b. **25-50 Acres.** For mixed-use developments greater than 25 acres, but less than 50 acres in size, required open space shall include at least two small open space types and one medium open space type.
- c. **Greater Than 50 Acres.** For mixed-use developments greater than 50 acres in size, required open space shall include at least three small open space types and two medium open space types.

3. **Nonresidential Districts.** All new development subject to this Section, unless specifically exempted, within nonresidential districts as defined in Section 3.1.2: Nonresidential Districts, shall require a minimum 5% open space, calculated from the total size of the development. The required 5% open space shall also comply with the following additional standards:

- a. **Less Than 25 Acres.** For commercial developments less than 25 acres, required open space shall include at least one small open space type.

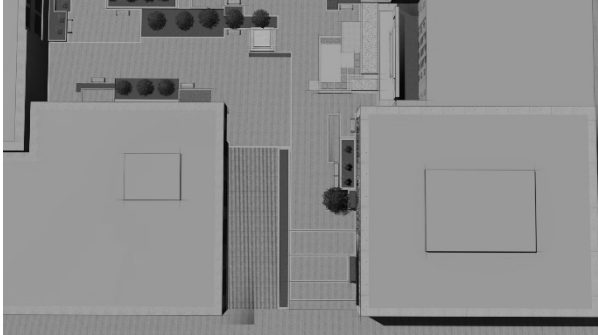
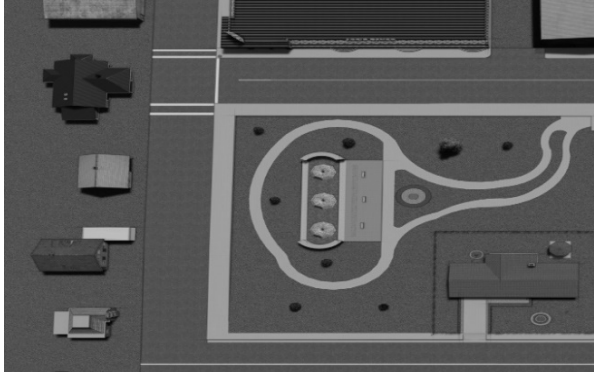
- b. **25-50 Acres.** For commercial developments greater than 25 acres, but less than 50 acres in size, required open space shall include at least one small open space type and one medium open space type.
 - c. **Industrial.** Developments within the Industrial zoning district shall not be required to provide open space.
- E. **Open Space Sizes.** Open space shall be categorized as small, medium, and/or large. Each open space size has a permitted range of acreage. The acreage calculation for each open space size is defined in Table 6.3.1.1.

Table 6.3.1.1. Open Space (Size/Acreage)

Open Space Size	Acreage (range)
Small	500 SF – 1.0 Acre
Medium	1.0 – 2.5 Acres
Large	2.5 Acres Or More

- F. **Open Space Types.** In addition to size categorization, open space shall be defined by type. Open space types may be considered more than a single open space size (i.e. an open space type may be considered both a small and medium open space size). Open space shall include the open space types defined in Table 6.3.1.2.

Table 6.3.1.2. Open Space Types

Open Space Type	Illustrative/Example
<p>Plaza</p> <p>Description: Plazas serve as a gathering place for civic, social, and commercial purposes. The Plaza may contain a greater amount of impervious coverage than any other open space type. Typically located in the front or sides of a building or group of buildings. Plazas shall be partially paved with brick, concrete, permeable pavers or similar material.</p> <p>Size: Small or Medium</p> <p>Features: Shade structures, seating/benches, tables, including gaming tables, fountains and public art.</p>	
<p>Pocket Park</p> <p>Description: Pocket parks are primarily landscaped and may provide active or passive recreation. Provides gathering space within a one-quarter mile walking distance of a majority of residents.</p> <p>Size: Small</p> <p>Features: Shade structures, gazebo, seating areas, multi-purpose lawn space, dog park, playground/play space, trail; may also be formed around and include an environmental feature such as a stream, creek, or wetland.</p>	

Amenity Center

Description:

Amenity centers provide recreational opportunities and are typically included in residential developments.

Size:

Small or Medium

Features:

Pools, splash pads, outdoor seating, clubhouse, small scale recreational facilities such as pickleball, soccer, or shuffleboard, and lawn games.



Green

Description:

Greens provide more informal spaces supporting active or passive recreation for neighborhood residents within walking distance. Typically bounded by streets and/or the fronts of buildings.

Size:

Small or Medium

Features:

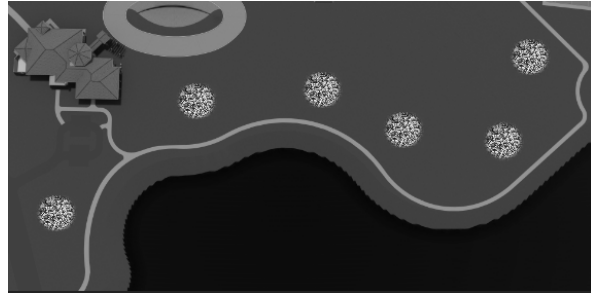
Shade structures, gazebo, seating areas, multi-purpose lawn space, playground/play space, limited/small scale recreational facilities.



Linear Park/Greenway

Description:

Linear parks may also be referred to and used as a greenway. Generally provides more informal types of open space; however, may be formalized based on its function (i.e., multimodal trail/connectivity). Typically follows a natural feature including but not limited to a creek, stream, wetland system, or man-made feature natural feature; may also follow streets. Linear Parks may connect other open spaces, as well as neighborhoods.



Size:

Medium or Large

Features:

Walking trails, sidewalks, environmental features (wetlands, creeks, streams), shade structures, gazebo, seating areas, multi-purpose lawn space, playground/play space. Man-made lakes and stormwater features be included in this type; however, must be publicly accessible with a trail or sidewalk.

Neighborhood Park

Description:

Neighborhood parks provide formal and/or informal active and passive recreational activities to residents and the community.

Size:

Medium or Large

Features:

Shade structures, gazebo, seating areas, multi-purpose/sports fields, pools, great lawn playground/play space, natural environments and plantings. Man-made lakes and stormwater features be included in this type; however, must be publicly accessible with a trail or sidewalk. At least 25% of the park area shall be dedicated to active recreation purposes such as playgrounds, tennis courts, pickleball, ball fields, or similar activities.



Square

Description:

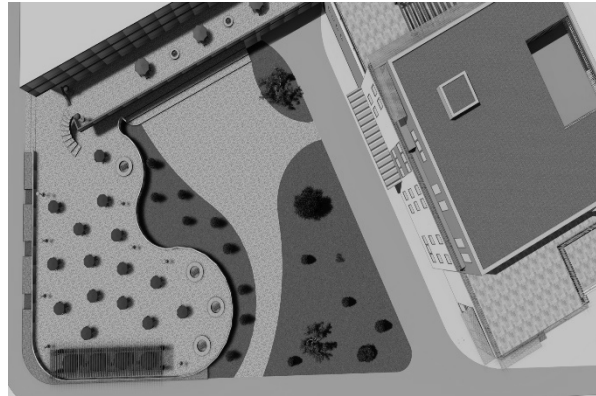
Squares are small to medium in scale; serve as a more formal open space for gathering for civic, social, and commercial purposes. Squares are bordered by vehicular right-of-way (public and/or private), which, together with building frontages, creates its definition and boundaries.

Size:

Small or Medium

Features:

Shade structures, gazebo, seating areas, multi-purpose lawn space, playground/play space, sidewalks, or other pedestrian facilities.



Active Use Area

Description:

Active use areas are a small open space. Active use areas are primarily intended to allow for pedestrian activity and provide attractive, safe and functional environments for the gathering of people, eating and drinking, and small scale outdoor uses in an urban environment. Active use areas may include outdoor dining, small outdoor music venues, or flexible urban space.

Size:

Small

Features:

Outdoor dining facilities, shade structures, seating areas, pedestrian facilities.



- G. **Open Space Design Standards.** The design and incorporation of open space in a development shall comply with the following standards:
1. **Evenly Distributed.** Open space shall be, to the maximum amount practicable with respect to environmental considerations and subdivision design, evenly distributed throughout the development.
 2. **Consolidation.** Required open space requirements shall not be consolidated to meet the standards of this Section. It is the intent of this Section to require multiple open space types of varying sizes in each development where required.

3. **Distance.** No two open space types shall be adjacent or within 100 feet of each other. Active use areas are exempted from this standard.
4. **Accessible.** Open space shall be located and designed to be easily accessible for residents and/or users of the development. Open spaces shall make accommodations to provide universal designs that may be enjoyed by different target users and provide for ADA accessibility.
5. **Public Seating.** Public seating shall be required. Public seating shall be appropriate to the intended use of the park area (i.e. benches may be appropriate for active spaces; Adirondack chairs and landscape terraces may be appropriate for passive spaces).
6. **Receptacles.** Refuse and recycling receptacles are required at each entrance and gathering space.
7. **Stormwater.** A maximum 50% of total required passive open space may be stormwater facilities. Any stormwater facility used toward that requirement shall be publicly accessible through improved or primitive trail. For the purpose of this Section, improved and primitive trails are defined below:
 - a. **Improved Trail.** An improved trail shall be defined as a clearly marked, paved, impervious trail.
 - b. **Primitive Trail.** A primitive trail shall be defined as an unpaved, pervious trail that consists of mulch, crushed stone or similar material.
8. **Environmentally Sensitive/Unique Lands and Floodplains.** A maximum 20% of total required passive open space may be environmentally sensitive or unique lands such as wetlands, protected stream buffers, rock outcroppings, and floodplains.
9. **Ponds and Lakes.** A maximum of 5% of total required passive open space may be ponds and lakes not associated with stormwater retention if at least 25% of the shoreline is a public edge, and public access is provided that is equivalent to the access provided to private landowners around the lake.
10. **Parking.** A limited amount of parking spaces may count toward open space requirements as defined below.
 - a. **Small.** Small open spaces shall not count any parking as part of its open space calculation.
 - b. **Medium.** Medium open spaces may count up to five (5) parking spaces as part of its open space calculation.

- c. **Large.** Large open spaces may count up to ten (10) parking spaces as part of its open space calculation.

11. **Multi-Phased Developments.** In multi-phased developments, open space shall be provided for each phase in an amount sufficient to satisfy the open space requirements for the subject phase of development and all preceding phases of development.

12. **Active and Passive Features.** A minimum of 50% of all required open space shall be dedicated and designed to allow for active recreation features. For example, a 50 acre residential development requires, at minimum, 5 acres of land dedicated to open space. Of that 5 acres, a minimum 50% (2.5 acres) shall be dedicated for active features. Active recreation and passive features are identified in Table 6.3.1.3. Table 6.1.3.3 includes, but is not be limited to, those features identified.

- a. Active recreation is defined as recreational features, often requiring equipment and taking place at prescribed places, sites or fields, which allow for the active recreational needs of residents or users of the development which they serve.
- b. Passive recreation is defined as recreational features that do not require prepared facilities like sports fields or pavilions and require minimal disruption to a site. These include such activities as walking paths and other features defined in Table 8.8.3.E.

Table 6.3.1.3. Active and Passive Features

Active Features	Passive Features
Lawn Games and Concrete Gaming Tables	Walking Trails
Hard Courts (Pickleball, Tennis, Etc.)	Boardwalks
Playgrounds	Gardens
Swimming Pools and Splash Pads	Greens
Athletic Fields (Soccer, Baseball, Etc.)	Picnic Areas
Clubhouse, Pavilions, Amenity Centers	Lakes and Ponds
Exercise Facilities	Lawns and Natural Areas

Plazas	Greenways
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- H. **Ownership of Open Space.** Open space is intended to remain under private ownership while still being available for public use by residents and users of a development. Ownership of open space shall remain with the owner of the land unless one of the following circumstances exist:
1. **Homeowners Association (HOA)/Property Owners Association (POA).** Open space may be owned in common by the owners of a development through a recognized homeowners association (or similar ownership association).
 2. **Nonprofit.** Open space may be conveyed to a nonprofit organization (i.e. a conservation ground, land trust, etc.) for management. The nonprofit shall be required to manage and maintain the open space.
 3. **Dedication.** Open space may be dedicated to the Town during the review process if an agreement is made between the applicant and Town. The Town shall have final authority on which lands are dedicated to the Town.
- I. **Maintenance of Open Space.** The owner of open space shall be required to maintain the open space. This shall include regular maintenance of vegetation as well as infrastructure components (stormwater facilities, paths, impervious surfaces, amenities, etc.). Failure to maintain the open space in the condition in which it was approved will result in code enforcement action and potential penalty by the Town.
- J. **Greenways.** Consistent with the adopted 2017 Comprehensive Plan and Rolesville Parks and Recreation Master Plan, greenways are recreational and transportation corridors that connect people to the places they want to go and provide recreational and fitness opportunities. Greenways are understood to preserve and create open space, encourage physical fitness, provide alternative means of transportation, create opportunities for outdoor recreation, and provide connectivity between open spaces, schools, cultural sites, neighborhoods, and other commuter destinations. Where land is designated as part of the Town's adopted greenway system, development shall comply with the Town's adopted plans and include the creation of new greenway trails. New development may also provide additional greenways and/or connections to greenways in accordance with the standards of this Section.
1. **Greenway Dedication.**

- a. In compliance with the adopted Rolesville Parks and Recreation Master Plan, the Town shall utilize partnerships with private developers to develop new greenways and increase its level of service between 0.4 miles per 1,000 residents and 1.5 miles per 1,000 residents.
 - b. Land that is dedicated in fee-simple interest for the purpose of a greenway shall be credited toward density calculations.
2. **Greenway Design.**
 - a. All greenways shall include a multi-use path of a minimum of 10 feet wide within a dedicated right-of-way or public easement of at least 50 feet. Greenways shall be wide enough to accommodate a variety of pedestrian mobility, including walkers, hikers, joggers, and bicyclists.
 - b. Greenway connectors shall be a minimum of 8 feet wide.
 - c. Where land is designated as part of the Town's adopted greenway system, a comprehensive greenway and trail plan demonstrating compliance with this Section shall be required as part of any site plan or subdivision approval.
3. **Topography.** Greenways and connectors should be designed to fit the contours of the land and should minimize removal of significant trees.
4. **Accessibility.** All greenways shall be designed to accommodate a variety of users including walkers, joggers, cyclists, and similar modes of pedestrian movement.
5. **Paving.** Greenways shall be improved trails of impervious materials. The Board of Commissioners may approve a variance for portions of a greenway to be primitive trails (i.e. unimproved, pervious materials such as mulch), provided a written narrative and illustration of the proposed variance is included with an application for a variance.
6. **Public Access.** All greenways and greenway connectors shall be maintained for public access, whether by easement or by public dedication.
7. **Amenities.** For land designated as part of the adopted greenway/bikeway system, greenways shall provide basic amenities for targeted users. Such greenways shall provide at least three of the following: Drinking fountains,

restrooms, trash receptacles, benches, bicycle racks, and shade structures. Way station facilities may also be considered for greenways. These facilities may also include small buildings/kiosks containing exhibits and/or minor food provisions. Land not designated as part of Town's adopted greenway/bikeway system is not required to meet this requirement.

8. **Open Space Considerations.** Land area dedicated as a greenway shall be credited towards applicable open space percentage requirements in this Section. Greenways are considered to be a passive feature.
9. **Fee-In-Lieu Option.** Per the adopted 2017 Comprehensive Plan, private developers shall be provided a fee-in-lieu option for greenway construction.

6.3.2. BUFFERING

*Editorial Note: Inserted most recent version from 11-25-2020.

6.3.2.1. PERIMETER BUFFERS

- A. **Purpose and Intent.** This Section defines the minimum required perimeter buffering standards. These standards intend to minimize potential nuisances, such as noise, pollution, lights, and buildings or parking areas through physical and visual separation between land uses in separate zoning districts.
- B. **Applicability.** All new development shall comply with the standards of this Section. The following shall also apply in instances of repairs, renovations or additions. No permit for construction of any building, structure or use may be issued until buffering has been provided in accordance with this Land Development Ordinance (LDO).
1. **Repair or Renovation.** A building may be repaired or renovated without requiring buffering per the requirements of this LDO provided there is no increase in gross floor area.
 2. **Minor.** When a building or site is increased in gross floor area or improved site area by 10% or less, buffering is required only for the additional floor area or improved site area. Improved site area shall include site improvements such as utility installations, landscape modifications, additional impervious surfaces (including parking), and/or construction of structures.
 3. **Major.** When a building or site is increased in gross floor area or improved site area by greater than 10%, both the additional area and existing area must conform to the buffering standards in this LDO. Improved site area shall include site improvements such as utility installations, landscape modifications, additional impervious surfaces (including parking), and/or construction of structures.
 4. **Change in Use.** A change in use shall not require compliance with this Section, unless if the specific use has a use standard requiring a specific buffer.

C. Perimeter Buffer General Standards.

1. A perimeter buffer (i.e. buffer) area is determined exclusive of any required setback, however perimeter buffers may be located in required setback. Buffer areas must be located within the outer perimeter of the lot, parallel to and extending to the lot line. Buffers are understood to be located and measured from the property line.
2. Perimeter buffer areas shall consist of a landscaped buffer intended to mitigate and screen the property from adjacent properties. No buildings, structures, principal or accessory uses are allowed in the buffer. Only the items identified in Section 6.3.2.D: Permitted Items Within Perimeter Buffers, are permitted within the buffer.
3. Perimeter buffers begin at the common property line, immediately abutting the adjacent property. Where there is a perimeter easement (such as a drainage or utility easement) that does not allow for the installation of the buffer, then the required buffer shall be placed as close to the property line, adjacent to the easement, as possible.

D. Permitted Items Within Perimeter Buffers. Required and additional plant materials, fences, walls and berms are permitted in a buffer.

1. **Plant Material.** Required plant material, including ground cover and lawn grasses, shall be planted within the buffer. Plant material may be planted parallel to the buffer perimeter or may be meandered for aesthetic purposes. Required plant material may not be clustered and shall be planted in accordance with this Section and Section 6.3.4: Landscaping Design Standards. Buffers may incorporate greater width and additional plant materials. Perimeter buffers types standards are defined in 6.3.2.E and illustrations of the buffer types are illustrated in Section 6.3.2.F.
2. **Fences and Walls.** Required fences and walls shall be installed in accordance with Section 6.5: Fences and Walls, and inside the buffer, not along outer perimeter and boundary line. Required plant material shall be installed in front of any required fence so the required plant material is completely visible from

the adjacent property or right-of-way and meet the standards of 6.3.2.D.1 above.

3. **Berms.** Berms shall be installed in accordance with Section 6.5: Fences and Walls, and the highest point of the berm shall exist in the middle of the required buffer. Any required fence or wall shall be installed at the highest point of the berm. Required plant material shall be installed in front of any required fence or wall, alongside the outer perimeter of the buffer, along the property line within the buffer and meet the standards defined in 6.3.2.D.1 above.

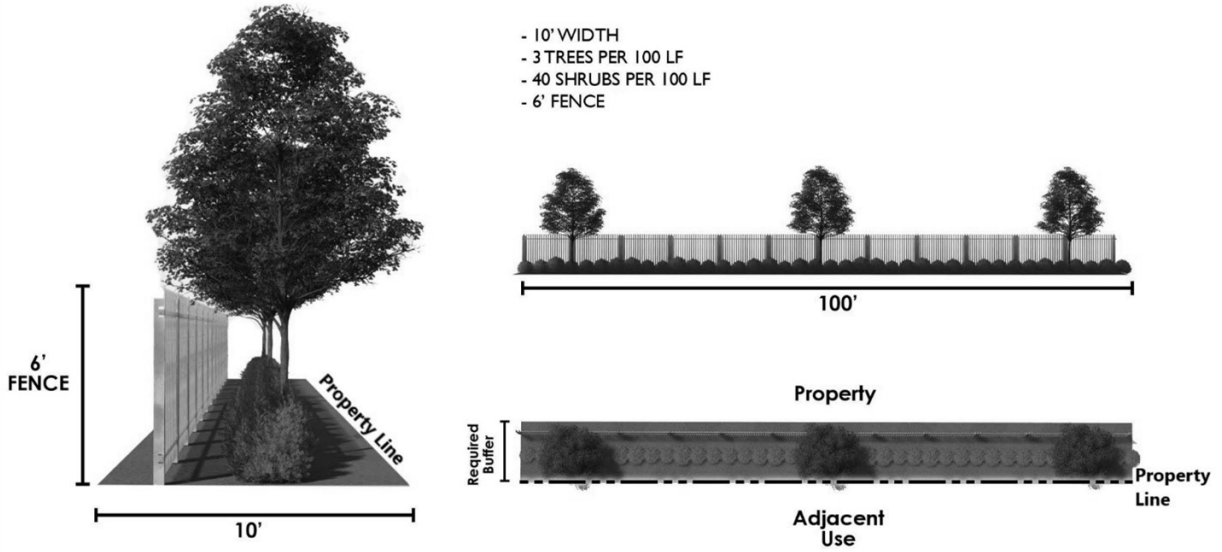
E. Perimeter Buffer Types. Table 6.3.2.1 provides four (4) different buffer types.

Table 6.3.2.1. Perimeter Buffer Types Table

	Type 1	Type 2	Type 3	Type 4
Min. Width	10'	15'	25'	50'
Min. Canopy Trees	3	3	4	8
Min. Understory Trees	N/R	1	2	4
Min. Shrubs	40	50	60	Hedge
Min. Fence	6'	6'	N/P	N/P
Min. Wall	N/R	N/R	6'	3'
Min. Berm	N/R	N/R	N/R	5'
<p>Note: <u>Measurements provided are per 100 linear feet.</u></p> <p>Key: N/R: Not Required N/P: Not Permitted Min: Minimum</p>				

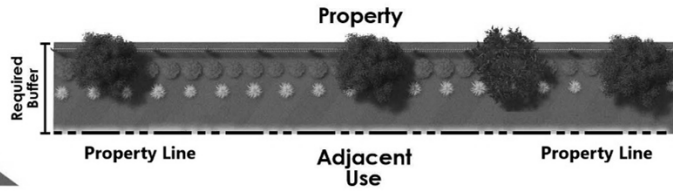
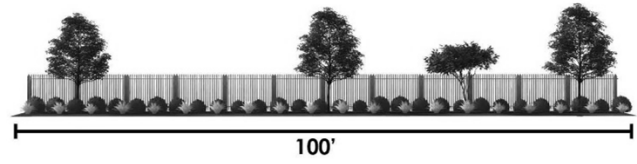
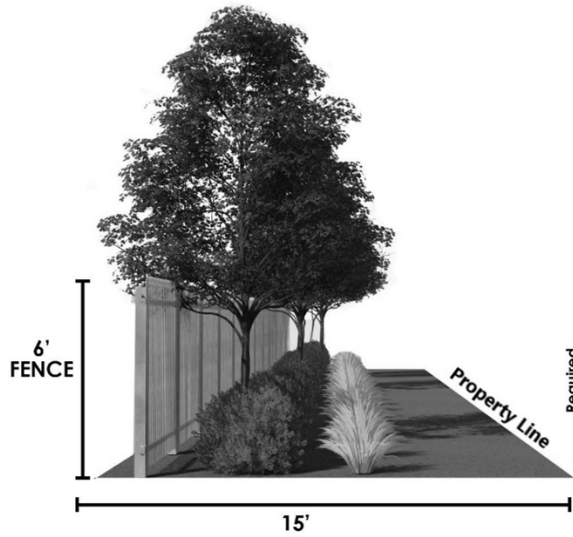
F. **Perimeter Buffer Types.** The following images show an example of buffer types defined in Table 6.3.2.1.

1. **Perimeter Buffer Type 1**



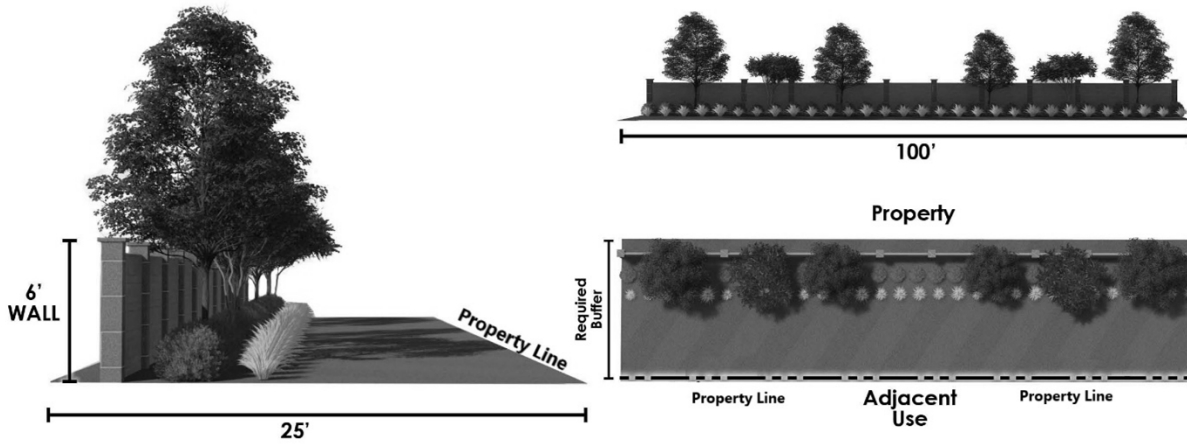
2. Perimeter Buffer Type 2

- 15' WIDTH
- 3 TREES PER 100 LF
- 1 UNDERSTORY TREE PER 100 LF
- 50 SHRUBS PER 100 LF
- 6' FENCE

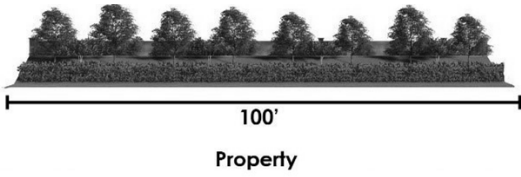


3. Perimeter Buffer Type 3

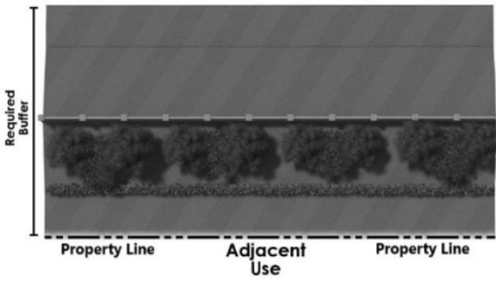
- 25' WIDTH
- 4 TREES PER 100 LF
- 2 UNDERSTORY TREE PER 100 LF
- 60 SHRUBS PER 100 LF
- 6' WALL



4. Perimeter Buffer Type 4



- 50' WIDTH
- 8 TREES PER 100 LF
- 4 UNDERSTORY TREE PER 100 LF
- CONTINUOUS HEDGE
- 3' WALL
- 5' HIGH BERM



- H. **Mixed-Use Perimeter Buffers.** Mixed-use districts, as identified in Section 3.4: Mixed-Use Districts, shall comply with the standards in 6.3.3: Mixed-Use Perimeter Compatibility, for compatibility along perimeters of a mixed-use district.

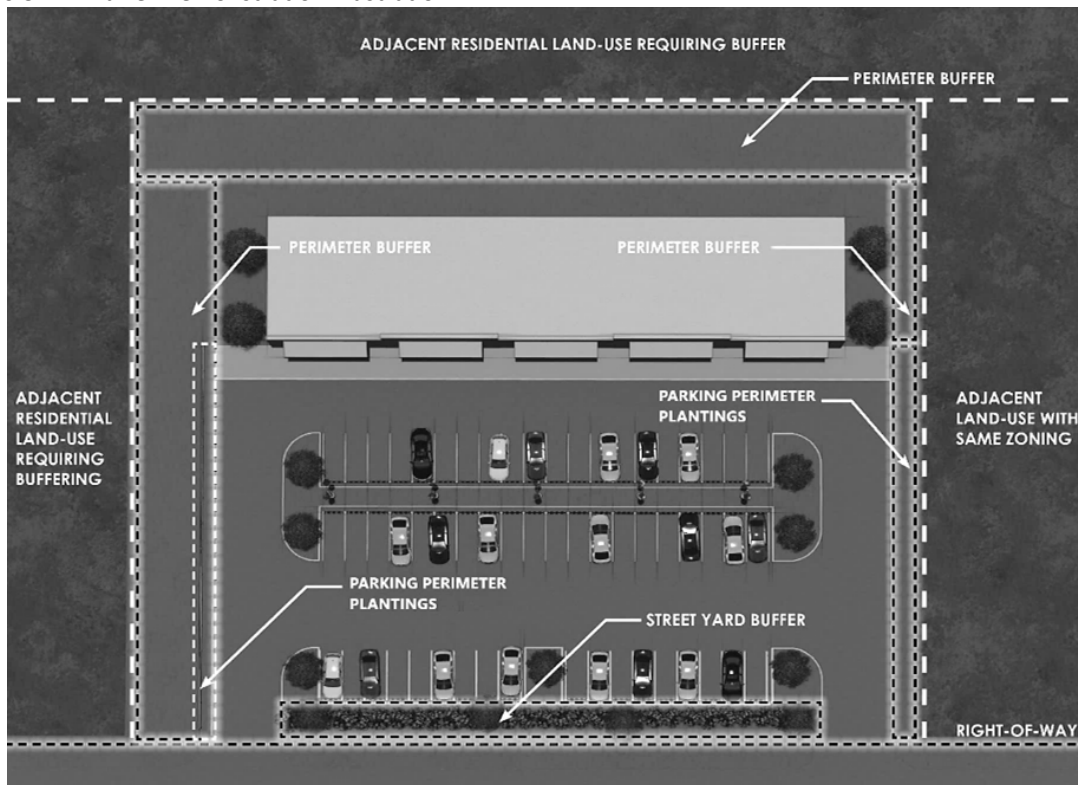
6.3.2.2. STREET BUFFERS

- A. **Purpose and Intent.** Street buffers are required to enhance development along the Town's street rights-of-way and intend to:
1. Enhance pedestrian enjoyment of the Town and provide shade for streets and sidewalks;
 2. Enhance the Town's "sense of place";
 3. Enhance property values by enhancing the aesthetic character of the Town's streets; and
 4. Provide areas for vegetation and fauna.
- B. **Applicability.** Any development that involves the construction of a new principal building or development along a street or right-of-way, except for exemptions listed in this Section, must include the installation of a street yard buffer.
- C. **Exemptions.** Street buffers shall not be required along private drives, driveways, alleyways, or single lot infill within existing residential subdivisions.
- D. **Standards.** Street buffers are required on all thoroughfares as shown on the adopted land use plan and/or thoroughfare map. Street buffers are to remain undisturbed except where no existing vegetation is present. All uses which require site plan approval or subdivision plan approval shall preserve, install and maintain a planted street buffer along each thoroughfare it abuts which protects the existing vegetation and abuts the perimeter of the property. All street buffer plantings, including the installation of all plant materials, shall conform in accordance with the specifications of this Section. Street buffers along thoroughfares as shown on the adopted land use plan and/or thoroughfare map shall be in the form of Buffer Type 3, as defined in Section 6.3.2.1: Perimeter Buffers. All other roadways shall require a street buffer in the form of Buffer Type 1. Street buffers shall comply with the following additional standards:
1. A berm and wall is not required as part of a street yard buffer.

2. All required trees must be installed before the issuance of a certificate of occupancy. A temporary certificate of occupancy may be issued until the proper planting season is reached to complete required landscaping requirements.
3. Each large canopy tree in the street buffer shall be provided with at least 350 square feet of pervious ground area for root growth. Any planting area bounded by an impervious surface shall be at least ten feet wide.
4. Trees must be maintained in a healthy and growing condition until full maturity or replaced as necessary.
5. All slopes steeper than two to one shall be stabilized with permanent slope retention devices or a suitable combination of plantings and retention devices.

The width of the streetscape buffer shall be at least 30 feet, as measured from the right-of-way line but can be reduced to as little as ten feet by the Board of Commissioners in cases of hardship as provided in NC General Statutes.

Figure. 6.3.2.2. Buffer Demonstration Illustration



E. Buffers Along Fully And Limited Controlled Access Highways.

1. All properties adjacent to a fully controlled access highway or a limited access highway shall install and maintain a vegetated buffer along each controlled access highway, if any, which abuts the property. All buffer plantings shall perform in accordance with the specifications of this section. A 100 foot undisturbed buffer width is required along all fully and limited controlled access highways, measured from the ultimate right-of-way.
2. No development shall be allowed within required buffers; however, the Board of Commissioners may, permit the construction of a street, driveway, or utility easement in the buffer upon finding by the Town Board of Commissioners that such construction is necessary for safe ingress, egress, or utility service to the site. The nature and limits of such construction must be designated on an approved site plan, subdivision plan, or public street dedication map.

6.3.4. LANDSCAPING STANDARDS (GROUP 1)

12-2-2020 Editorial Note: This Section has been updated with new terminology of “Land Development Ordinance” or “LDO”. Land Development Administrator has been modified to “Land Development Administrator”. Design alternatives have been struck. Dropped in most recent version from 12-1-20 into this Master Draft.

6.3.4.1. PURPOSE AND INTENT

A. **Purpose and Intent.** Landscaping standards defined in this Section intend to improve the appearance of the Town. This Section is intended to enhance, rather than inhibit economic development. The use of landscaped and maintained areas can reduce incompatibilities of adjacent land uses and promote and enhance community character. The standards outlined in this Section are designed to:

1. Increase the compatibility of adjacent uses;
2. Reduce excessive heat, glare and accumulation of dust;
3. Lessen visual pollution;
4. Promote water conservation;
5. Allow for greater environmental stewardship of resources;
6. Ensure landscape yards and screening to reduce the negative impacts of noise, trash, odors, lack of privacy and visual appearances that occur in higher intensity land uses;
7. Safeguard the public health, safety, and welfare; and
8. Ensure the appearance of the Town contributes positively to its growth and economic prosperity.

B. **Applicability.** All new development shall comply with the standards of this Section. The following shall also apply in instances of repairs, renovations or additions. No permit for construction of any building, structure or use may be issued until buffering has been provided in accordance with this LDO.

5. **Repair or Renovation.** A building may be repaired or renovated without requiring buffering per the requirements of this LDO provided there is no increase in gross floor area.
6. **Minor.** When a building or site is increased in gross floor area or improved site area by ten (10) percent or less, buffering is required only for the additional floor area or improved site area. Improved site area shall include site improvements such as utility installations, landscape modifications, additional impervious surfaces (including parking), and/or construction of structures.
7. **Major.** When a building or site is increased in gross floor area or improved site area by greater than ten (10) percent, both the additional area and existing area must conform to the buffering standards in this LDO. Improved site area shall include site improvements such as utility installations, landscape modifications, additional impervious surfaces (including parking), and/or construction of structures.
8. **Change in Use.** A change in use shall not require compliance with this Section, unless if the specific use has a use standard requiring a specific landscape buffer.

6.3.4.2. LANDSCAPE PLAN AND REVIEW

- A. **Landscape Plan.** All development applicable under this Section shall submit and receive approval of a landscape plan from the Planning Department, as required to be included in a site plan. Detail shall be provided on the plan showing the required landscaping within a 100 linear foot Section of any buffer. Species of trees and shrubs shall be chosen from the approved plant list, as defined in Section 6.3.4.7: Approved Plant List. Preservation of existing vegetation is encouraged and may be used to meet requirements of this Section. A landscape plan shall include the following:
 1. Title of project;
 2. Dimensions, scale and north arrow;
 3. All required open space shown on the plan;
 4. Indigenous or native vegetation;
 5. All landscaped areas;

6. Identify all LDO required landscaping;
 7. Vehicle use areas including parking, aisles and driveways;
 8. Roadways and access points;
 9. Plant spacing and native status;
 10. Preservation plan;
 11. Overhead and underground utilities; and
 12. A tree and/or vegetative survey
- B. **Installation.** All landscaping shall be completed in accordance with approved site plan and the standards of this Section. Required landscaping shall also comply with the following standards:
1. A certificate of occupancy shall not be issued, until all required plant materials have been placed in accordance with the approved landscape plan and requirements of this Section.
 2. A temporary certificate of occupancy may be issued for a period of 30 to 180 days under circumstances that would affect the installation of required plant material, or until the proper planting season is reached, to complete the requirements of this Section.
 - a. In cases where a temporary certificate of occupancy is requested, the applicant shall furnish the following: A signed contract for the installation of all required landscape materials and a performance guarantee for the amount of the contract. Reasons to grant a temporary certificate of occupancy may include unavailability of plant species, unusual environmental conditions, or inappropriate planting season.
- C. **Inspections.** The Land Development Administrator shall inspect landscaping prior to the issuance of a certificate of occupancy (unless a temporary certificate of occupancy has been granted). As as-built plan shall be provided to the Town for landscaping improvements required per the site plan.

1. The Land Development Administrator shall inspect the site one year after the issuance of the certificate of occupancy to ensure compliance with the approved site plan.

D. **Multi-Phase Development.** Multiple family, nonresidential, and mixed-use development that is planned and developed in phases shall install landscaping that is associated with the active phase or phases only, unless an alternative arrangement is otherwise agreed to. An active phase of a development is the one that is subject to permitted and on-going development activity.

6.3.4.3. LANDSCAPING STANDARDS

A. General Standards.

1. **Plant Species.** All species of trees and shrubs used in required buffers shall be chosen from the approved plant list as defined in Section 6.3.4.7: Approved Plant List.
2. **Canopy Trees.** Canopy trees must be a minimum of eight (8) feet in height and two (2) inches in caliper at time of installation and reach an expected height of at least 30 feet. In lieu of any requirement for a canopy tree, two (2) understory trees may be planted.
3. **Understory Trees.** Understory trees must be a minimum of eight (8) feet in height and one (1) inch in caliper at time of installation.
4. **Shrubs.** Shrubs shall reach a minimum height of 30 inches and spread of 30 inches within three years of planting.
5. **Fences/Walls.** Fences and walls shall be constructed of high-quality materials including brick and stone, stucco over concrete masonry blocks, treated wood, wrought iron/aluminum, composite fencing, or PVC vinyl. The finished side of the fence shall face the adjoining property. Fences/walls shall be placed at the rear of a buffer so the adjoining property benefits from the view. No fence/wall shall exceed eight (8) feet in height. All fences and walls shall comply with the standards of Section 6.5: Fences, Walls, and Berms

6. **Berms.** Berms shall be stabilized and have a slope not exceeding 3:1 (horizontal to vertical) and shall comply with the Standards of Section 6.5: Fences, Walls and Berms.
 7. **Stabilization.** All required landscaping shall be stabilized and maintained with vegetative cover, mulch or other approved materials by the Land Development Administrator to prevent soil erosion. Vegetative cover shall be installed and utilized to minimize erosion on all slopes greater than 15 percent.
 8. **Planters.** If a development provides planters, the following standards shall apply:
 - a. Planters shall be a minimum height of 30 inches.
 - b. Minimum height of plant material in the planter shall be six inches at time of planting.
 - c. Planters shall be constructed of masonry, stone or treated lumber. Other materials may be approved by the Land Development Administrator.
- B. Maintenance Standards.** The owner of property shall be responsible for protecting and maintaining plant material. Maintenance of plant material shall also comply with the following:
1. All landscaping, including landscaping used for buffers and screening purposes, shall be designed and maintained according to sound landscape and horticultural practices, and all fences/walls shall be maintained in the condition in which they were originally approved.
 2. All plant material shall be maintained in an attractive and healthy condition.
 3. Dead or diseased plant material shall be removed and replaced.
 4. The responsibility for maintenance of a required buffer shall remain with the owner of the property, or their grantee.
 5. In instances where existing plant material has been disturbed or damaged, replacement of plant material shall comply with the below standards:
 - a. Any tree with a caliper of at least eight (8) inches shall be replaced with one (1) or more trees which have a caliper of at least two (2) and one-half

(1/2) inches and a cumulative caliper equal to or greater than one half (1/2) of the original tree.

- C. Easements.** Nothing shall be planted or installed within an underground or overheard utility or drainage easement without Town approval and easement holder approval.
- D. Water Conservation.** Water conservation is recognized as an important component of landscaping standards, environmental stewardship, and promoting more sustainable development practices. The following water conservation standards shall apply:
1. Where irrigation systems are used, such systems shall be water efficient and utilize WaterSense standards as administered by the United States Environmental Protection Agency (EPA). Irrigation systems shall be controlled with WaterSense approved irrigation controllers, meeting EPA criteria standards.
 2. Irrigation systems shall be operated by an automatic irrigation controller and/or timer, and with a rain sensor.
 3. All required irrigation systems must be designed to minimize the application of water to impervious areas.

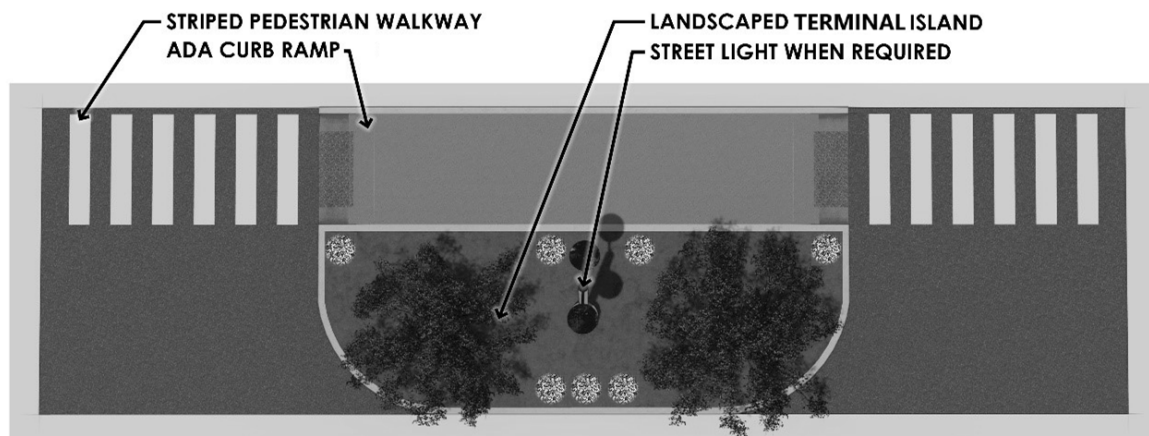
6.3.4.4. PARKING LANDSCAPING

- A. Applicability.** All parking lots serving multiple family, mixed-use, and nonresidential developments shall comply with this Section.
- B. Accessibility.** Nothing in this Section shall deny ADA accessibility within parking lots nor deny the placement of crosswalks and sidewalks through parking lots (including terminal islands, interior islands, and divider medians) required for pedestrian safety.
- C. Parking Terminal Islands Standards.** The following standard shall apply to all terminal islands within parking lots:
1. Each row of parking spaces shall end with terminal islands to separate parking from adjacent drive lanes.
 2. Each terminal island shall measure at least eight (8) feet in width by eighteen (18) feet in length, measured from the inside of the curb.
 3. Within terminal islands, one (1) large or medium canopy tree shall be required for every 150 square feet (or fraction above one half thereof), with a minimum

of one large or medium canopy tree required per terminal island. Two (2) understory trees may be used to meet the requirement of this subsection.

4. Terminal islands shall be landscaped with shrubs, accent plants, ornamental grasses, and ground cover, excluding sod, which is planted to provide 100 percent coverage within two (2) years.
5. Landscaping in islands adjacent to parking spaces shall be set back a minimum of two (2) feet behind the back of the curb to provide for pedestrian access to parked vehicles.
6. Lighting may be installed in parking terminal islands.
7. Parking lots or portions of parking lots not visible from the streets excluding alleys, shall not be required to install terminal islands.

Figure 6.3.4.4.1. Terminal Island Landscaping Illustrative Example



D. Parking Interior Islands Standards. The following standard shall apply to all interior islands:

1. Each interior island shall measure at least eight (8) feet in width by eighteen (18) feet in length, measured from the inside of the curb.
2. The Land Development Administrator may reduce the required width by up to three (3) feet (minimum width five (5) feet) where existing site constraints (e.g. small site) make compliance impracticable or where such reduction will allow preservation of existing trees.
3. Interior islands less than five (5) feet in width, measured from the inside of the curb, shall not be credited towards interior landscaping. Within interior islands, one large or medium canopy tree shall be required for every 150 square feet (or fraction above one half thereof), with a minimum of one large or medium canopy tree required per interior island.
4. Landscaping in islands adjacent to parking spaces shall be set back a minimum of two (2) feet behind the back of the curb to provide for pedestrian access to parked vehicles.
5. Lighting may be installed in parking interior islands.

E. Parking Divider Medians Standards. The following standard shall apply to all divider medians:

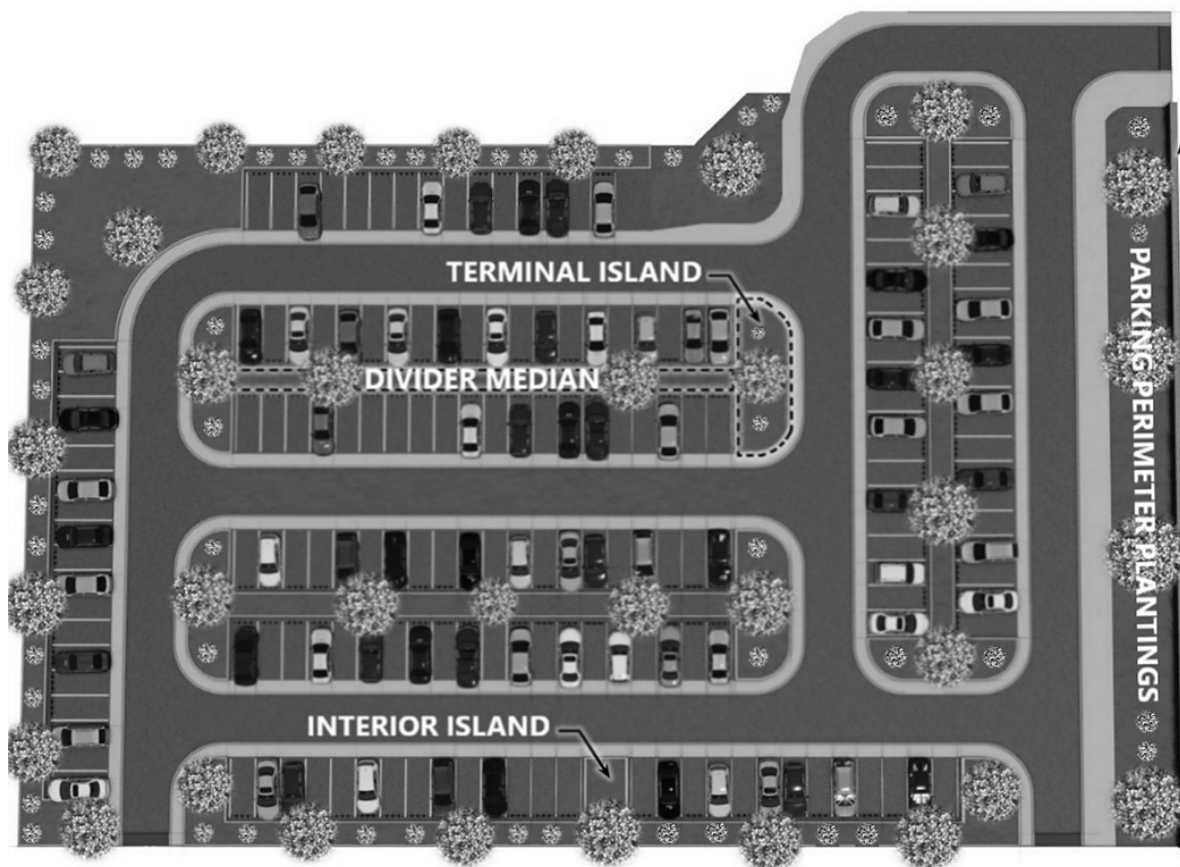
1. Landscaped divider medians shall form a continuous landscaped strip between abutting rows of parking areas or access drives.
2. The minimum width of a divider median shall be a minimum seven (7) feet, measured from the inside of the curb.
3. One (1) large or medium canopy tree or two (2) small under-story trees shall be required for each 30 linear feet of divider median (or fraction above one half thereof).
4. Shrubs shall be planted in divider medians which separate parking areas from access drives to form a continuous hedge the full length of the divider median.
5. Pedestrian scale lighting must be provided within divider median(s).

F. Parking Perimeter Plantings. Parking perimeter plantings shall be required to enhance the view of a parking lot from abutting streets and abutting properties. Parking

perimeter plantings shall be provided on the perimeter of all parking lots. Parking perimeter plantings shall comply with the following standards:

1. Required plant material shall be placed adjacent to the perimeter of the parking lot.
2. Parking perimeter plantings shall consist of a single continuous row of shrubs planted no greater than three feet on-center and within five feet of the parking lot edge.
3. Shrubs used for parking perimeter planting shall be of a minimum height of 30 inches above grade within three years of planting. Shrubs may not exceed a height of four (4) feet and shall be pruned and maintained.
4. Where parking lots are adjacent on different lots, parking perimeter plantings or other forms of screening are not required along the common boundary between the two parking lots. This includes developments configured as a single, unified development.

Figure 6.3.4.4.2. Parking Landscaping Illustrative Example



6.3.4.5. VEGETATION PRESERVATION

A. **Purpose and Intent.** As the Town of Rolesville continues to develop and grow, there is a need for the construction and renovation of buildings, roads, parking lots and other infrastructure. Vegetation preservation and tree protection regulations are necessary to protect desirable trees and plant material and is a vital part of sustainable, community growth.

1. This Section intends to limit excessive pruning or clear-cutting of existing trees, vegetation, and other landscaping.
2. This Section shall provide a uniform standard for the protection and replacement of trees on all property which require any type of development permit.

3. Existing trees and vegetation may be counted toward landscaping, buffering requirements and toward preservation standards as required in this LDO.

B. Preservation Standards.

1. Deciduous and evergreen trees shall be preserved to the greatest extent possible.
2. Trees at least twenty-five (25) inches in circumference, diameter at breast height, within required buffering and landscaping areas shall be tagged prior to any site clearance and be preserved. At least ten (10) percent of all existing trees shall be preserved.
3. In any case where a deciduous and/or evergreen tree over twenty-five (25) inches in circumference, diameter at breast height, is removed from the buffer, it shall be replaced with at least four (4) or more trees of similar species and size, the locations of which shall be determined by the Land Development Administrator.
4. Trees seventy-five (75) inches in circumference, diameter at breast height, must be preserved and shall not be removed.
5. All existing vegetation which meets landscape buffer requirements shall be preserved on the site. Existing vegetation shall be clearly marked on landscape plans.
6. All vegetation and buffers that are to be preserved shall be enclosed with a sturdy and visible fence before grading begins for both site plans and subdivisions. This fence shall be located at a distance determined by the following formula: No less than one foot from the tree trunk for each one inch in tree diameter. For example, fencing is to be placed no less than ten feet from a ten (10) inch caliper tree.
7. All tree protection fencing must remain in place throughout the entire site development process until the time a certificate of occupancy is issued. In the case of subdivision development, tree protection fencing must remain in place until all units are completed (received certifications of occupancy) within any designated phase or plat.

8. The owner of the property shall be responsible for protecting and maintaining the plants in the designated preservation areas in a healthy, growing condition and for keeping the area free of refuse and debris. The owner of the property shall be responsible for replacing the vegetation if they are destroyed or substantially damaged.

C. **Preservation Plan.** A preservation plan shall be required as part of any landscaping plan submitted to the Land Development Administrator and meet the following standards:

1. The plan must show there will be no disturbance within a critical root zone of trees, as defined in this LDO.
2. A critical root zone shall be protected from encroachment and damage.
 - a. The preferred method is to restrict access by installing a barrier to keep materials, people, or equipment out of the critical root zone, as required in the preservation standards above.
3. Barriers shall be accompanied by temporary signs labeling the critical root zone.
4. The critical root zone area shall remain free of all building materials and debris.
5. The plan shall demonstrate compliance with all vegetation preservation standards.

6.3.4.6. SCREENING OF SERVICE AREAS AND OUTDOOR DISPLAY/STORAGE

A. **Service Areas To Be Screened.** Service areas and equipment shall be fully screened and out of view from adjacent properties and rights-of-way. Examples of these areas include, but is not limited to:

1. Open-air/outdoor storage;
2. Trash containment areas (i.e. refuse collection, trash containment devices, compactors, dumpsters);
3. Mechanical equipment (i.e. air conditioning units, rooftop mounted equipment);
4. Utility service areas;
5. Loading/unloading areas; and

6. Other similar service function areas

B. **General Screening Design Standards.** Screening shall comply with the following standards unless stated elsewhere in this Section:

1. Screening material and design shall be consistent with landscape plan.
2. Screening shall consist of, at minimum:
 - a. Landscaping the service area or equipment with a row of understory trees, shrubs, or berms which shall mature to the height necessary to fully screen the area or equipment;
 - b. Utilizing a wall or building wall projection, which complies with the standards of this LDO, which is consistent and compatible with the principal building in terms of texture, quality, material and color and which is the necessary height to fully screen the area or equipment; or
 - c. Fencing which complies with the standards of this LDO, which is consistent and compatible with the principal building and which is the necessary height to fully screen the area or equipment.

C. **Outdoor Display and Storage.** It is the intent of this Section to ensure open-air storage areas, including outdoor display and storage, located within 100 feet of a property line, shall be screened. Outdoor display and outdoor storage shall have specific standards below:

1. **Outdoor Display.** Outdoor display shall be defined for the purpose of this subsection as the outdoor display of products available for sale, including soft drink dispensing machines, propane gas storage racks, ice machines, kiosks, outdoor merchandise, and the like. Approved temporary uses are not considered outdoor display for the purpose of this Section. Outdoor display shall comply with the standards below:
 - a. Outdoor display shall be removed and placed in a fully enclosed structure at the end of every business day. Due to their commercial and pedestrian oriented nature, propane storage racks, soft drink dispensing machines, ice storage bins, may remain outside overnight.

- b. Outdoor display shall not extend more than eight (8) feet. No more than 25 percent of the horizontal length of the façade shall have outdoor display items.
 - c. Outdoor display areas shall not inhibit pedestrian travel paths (i.e. sidewalks) and ADA accessibility shall be maintained.
- 2. Outdoor Storage.** Outdoor storage shall be defined as either limited outdoor storage or intense outdoor storage. For the purpose of this subsection, outdoor storage is defined as the outdoor storage of materials, goods, and merchandise.
- a. **Limited Outdoor Storage.** Limited outdoor storage includes outdoor storage of merchandise which cannot easily be taken in and out of an enclosed structure as the end of the day, including items such as garden supplies, plants, sporting goods, overnight outdoor storage of vehicles awaiting repair, and storage of fleet vehicles, such as delivery vehicles. Limited outdoor storage is only permitted in the commercial or industrial districts and shall comply with the following standards:
 - i. Limited outdoor storage is limited to eight (8) feet in height and must be fully screened from the view of any public right-of-way, parking areas and adjacent properties. Fences, hedges, and plant material may be used to screen the limited outdoor storage.
 - b. **Intense Outdoor Storage.** Intense outdoor storage includes outdoor storage of raw, unfinished goods and materials, often associated with the manufacturing of another good. Common intense outdoor storage items include steel, salvage material, recycle materials, lumber, contractor equipment, and other raw material. Intense outdoor storage is only permitted in industrial districts and shall comply with the following standards:
 - i. Intense storage shall be located at least twenty (20) feet from any public right-of-way
 - ii. Intense outdoor storage is limited to eight (8) feet in height and must be fully screened from the view of any public right-of-way,

parking areas and adjacent properties. An eight (8) foot fence is required around the perimeter of the outdoor storage area.

D. Trash Containment Areas. All trash containment devices (i.e. dumpsters, refuse collection, etc.) shall have additional standards. Trash containment areas shall meet the following standards:

1. Trash containment areas shall be located and designed to not be visible from the view of adjacent streets and properties;
2. Trash containment devices may not be located in any front or street yard;
3. All trash containment areas shall be enclosed;
4. The enclosure shall be at least as high as the highest point of the trash containment device or compactor;
5. The enclosure shall be made of a material that is opaque; and
6. All trash containment devices shall be placed on a dedicated concrete pad.

E. Mechanical Equipment.

1. Rooftop mounted equipment shall be fully screened from view from a ground level view of an adjacent property line or middle of a right-of-way.
2. Any new buildings shall require a parapet wall or architectural element that screens roof mounted equipment or provide an opaque screen around the rooftop mounted equipment.
3. Roof-mounted sustainable energy systems (i.e. solar panels) are exempt from screening requirements.

F. Utility Service Areas. Utility service areas located outside the public right-of-way must be screened from public view. Screening shall consist of landscaping, fence or wall meeting the design requirements of this Section. Screening is not required for utility service areas that are related to emergency services (i.e. fire hydrants).

6.3.4.7. LANDSCAPE/PLANTING GUIDELINES.

- A. **Intent.** It is the intent of this Section to ensure that the planting and preservation of all plant materials and plant areas are maintained per the requirements of this Section. Locations, quantities, and species are to be provided by a licensed landscape architect and are subject to approval by Town Staff prior to the commencement of site work.
- B. **Plant Palette.** All plants shall be of native and locally adaptive species (zone 7 according to the USDA Plant Hardiness Zone Map). Town staff may be able to deny or recommend the use of different species if there is little plant diversity or plant species which are known to have common diseases or branching and/or root structures which do not fit within the specified plant location.
- C. **Plant Diversity.** All developments shall provide a diverse plant palette to promote diverse habitats, fungus and disease control, as well as enhance the town’s natural aesthetic. In developments with multiple roadway alignments, tree species should vary from street to street.
- D. **Planting Season.** It is recommended that all plant material be planted within the fall and/or spring growing seasons. If schedule or weather does not allow for the installation of the plant material within these windows, a temporary certificate of occupancy may be granted.
- E. **Planting within Easements.** The planting of trees is not allowed within any easement unless otherwise permitted by the Town and easement holder. Shrubs may be planted within Town owned easements but shall be placed at the property’s owner liability.
- F. **Plant Material.** In no case shall a plant species which has been identified as invasive by the *North Carolina Forest Service* be included. For recommended plant species, refer to the *North Carolina Department of Transportation’s* list of acceptable plant species as well as the *North Carolina State University Extension Plant Toolbox*.

Table 6.3.4.7. Plant Typologies and General Descriptions

Type	Size / Spread	Other / Notes
Canopy (Large Shade) Trees		

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Deciduous Canopy (≥ 35' height; ≥ 30' spread)	3" caliper 12' min. height	Installed along sidewalks in tree lawn / tree pit, parking lots, buffers and may be installed as a building / accent tree
Evergreen Canopy (≥ 18' height; ≥ 25' spread)	3" caliper 12' min. height	Installed along sidewalks in tree lawn / tree pit, parking lots, buffers and may be installed as a building / accent tree
<i>*all multi-stem trees shall have at least 3 stalks with a minimum caliper of 2.5"</i>		
Understory (Small/Medium) Trees		
Deciduous Understory/ Ornamental (≥ 15' height; ≥ 15' spread)	2" caliper 8' min. height	Installed along sidewalks May be installed as screening or accent. May be used to replace canopy tree where overhead utilities are present.
Evergreen (≥ 18' height; ≥ 15' spread)	2" caliper 8' min. height	Planted as a buffer between uses or used as screening or accent.
<i>*all multi-stem trees shall have at least 3 stalks with a minimum caliper of 1.5"</i>		
Shrubs		
Evergreen Shrubs	24" height minimum (unless otherwise required)	
Deciduous / Ornamental Shrubs	18" height minimum (unless otherwise required)	
Perennials	2 gal minimum	
Ornamental Grasses	2 gal minimum	
Ground Cover	1 gal minimum	