

ARTICLE 10

DEVELOPMENT AND DESIGN STANDARDS

Summary: This Article provides additional information on development and design standards including lot design standards, street improvement standards, parking and loading, and private driveway provisions. This Article also sets forth requirements for open space standards, which, depending on the location, may either be privately owned or maintained, or owned or maintained by the City.

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10.1 LOT DESIGN STANDARDS

10.1.1. PURPOSE OF SITE DESIGN STANDARDS

This Section establishes standards to guide the design and review of proposed developments involving the layout or development of lots and relationship to streets and other public facilities.

10.1.2. MINIMUM LOT STANDARDS

A. The provisions of this section shall apply to any newly created or proposed Lot or Parcel resulting from a subdivision of land as provided for in Article 5.

B. Lots shall meet or exceed zoning district standards and shall be designed for their potential uses, so that adequate buildable area is provided and adequate room for required setbacks (see § 7.6) and buffer yards (see Article 11) will exist on the lot.

10.1.3. BLOCKS

The purpose of this subsection is to discourage long blocks lined with homes and other buildings, which reduces street connectivity and diminishes the efficiency of public and safety services, while increasing distances between residences and non-residential destinations or public gathering places. The maximum length of any blocks within a subdivision shall not exceed that as shown in Table 10.1-1 (a dash [-] indicates that the requirement is not applicable). Block length shall be measured from the centerline of an intersecting street to the centerline of the next intersecting street or the center point of the terminus of the street.

Table 10.1-1 Block Length Requirements

Zoning District	Maximum Length
AG, RE	-
RM-1, RM-2, RV, RC	1,000 feet ¹
RL, B-1, CC, C-1, C-2	1,800 feet
I-1, I-2	-
PUD, TND	1,500
MX	600 feet ²

1. See Section 7.7.2 for additional requirements and exemptions for streets with structures on only one (1) side (also known as single-loaded streets).

2. See Sections 9.1 and 9.3.14 for additional requirements relative to mixed use districts.

10.1.4. CORNER LOTS

Side lot lines of lots abutting a public or private right-of-way shall, to the extent practicable:

- A. run at right angles to the right-of-way line, or
- B. in the case of cul-de-sacs or curvilinear street right-of-ways, radial to the curve.

10.1.5. LOT FRONTAGE REQUIREMENTS

- A. Unless otherwise permitted herein, every lot resulting from a subdivision of land as provided for in Article 5 shall abut and have direct access to an improved, publicly maintained street or

other public right-of-way legally dedicated), except as provided in this Section.

B. For proposed subdivisions with frontage on a thoroughfare street, the maximum number of lots to be created shall be limited to five lots. Any proposed subdivision proposing more than five lots shall require the additional lots to be served by a newly constructed internal public street.

C. Frontage on a public street shall not be required in the following situations; provided, however, that an easement providing access to the public street shall be recorded and substituted with the application for development approval:

1. Parcels within nonresidential subdivisions;
2. Town home lots where the individual lots are separated from a public right-of-way by a strip of land under common ownership by the owners of the town home lots;
3. Lots fronting on approved private streets;

D. Lots shall be designed with adequate frontage for the purpose of providing direct physical access to the property from public streets for vehicles and utilities and for public safety equipment.

10.1.6. FLAG LOTS

Flag lots may be developed on a limited basis in subdivisions where individual development of each lot is contemplated and the Administrator determines that no future street access through the property will be needed. Flag lots may be used to better use irregularly shaped properties or sites with physical limitations, or to eliminate or reduce access to a thoroughfare or collector street. Flag lots shall not be permitted in any proposed Subdivision except as provided for in this Section.

A. The maximum number of flag lots shall be set forth in Table 10.1-2, where the Administrator finds that the flag lot(s): (1) allow for the more efficient use of irregularly shaped parcels of land, or (2) where the integrated nature of multiple buildings on a site dictates the need for such lots.

Table 10.1-2 Maximum Number of Flag Lots

Size of Subdivision	Maximum Number of Flag Lots
2-20 lots	1 flag lot
Over 20 lots	1 flag lot per every 20 lots

- B. Table 10.1-2 does not apply to the AG District. Flag lots shall not be limited in the AG District.
- C. The Administrator may approve additional flag lots if evidence is presented that physical hardships prevent development of land using conventional lot design.
- D. The minimum width of the “pole” portion of a flag lot shall be 25 feet for residential lots and 30 feet for non-residential lots.
- E. The “pole” portion of the lot shall have maximum length not to exceed 250 feet.

10.1.7. CUL-DE-SAC LOTS

A lot located on a cul-de-sac that does not maintain the minimum required width along the public street frontage shall provide:

- A. lot frontage of at least 50 percent of the minimum required, but in no case less than 25 feet; and
- B. lot area equal to or greater than the minimum lot area (if one is specified); and
- C. the minimum required lot width at the building line.

10.1.8. PERIMETER BUFFER YARD FOR RESIDENTIAL SUBDIVISIONS (MAJOR SUBDIVISIONS ONLY)

- A. A buffer yard shall be required along the perimeter of a residential subdivision in order to separate residential lots from:
 - 1. abutting a thoroughfare; and
 - 2. abutting non-residential uses.
- B. The buffer yard for abutting non-residential uses shall be designed and landscaped per § 11.4. The buffer yard for abutting a thoroughfare shall be a Type D buffer as set forth in Table 11.4-2.

- C. All required buffer yards shall be platted as common areas and may be included as “open space” subject to the standards and criteria as set forth in § 6.5.

10.1.9. INFRASTRUCTURE STANDARDS

A. Standards for Street Design

Public and/or private streets shall be designed in accordance with the City’s, *Technical Standards Manual (TSM)*.

B. Standards for Utilities

Standards for the design and installation of public utilities shall be in accordance with the City’s TSM.

10.1.10 REDEVELOPMENT

The redevelopment of a parcel and/or lot resulting in a more intensive use and/or a subdivision of property shall warrant developer installed utility services and/or public utility extensions in accordance to State and City regulations and standards, with corresponding inspections completed by City staff. It should be noted that all public utility extensions of water infrastructure shall be planned along main City or State road thoroughfares and be extended to/serve all water connection points located at the extents of the proposed subdivision (i.e. subdivision roads intersecting with the main City or State road thoroughfare). In addition, proposed City water infrastructure along these main road thoroughfares shall be adequately sized from a hydraulic perspective and meet all of the City’s design regulations and standards.

As referenced in Section 10.1.2 (Minimum Lot Standards), proposed redeveloped lots shall meet the following criteria:

- A. The provisions included in Article 6, Section 6.6 shall apply to any newly created or proposed Lot or Parcel resulting from a subdivision of land as provided for in Article 6.
- B. Lots shall meet or exceed zoning district standards and shall be designed for their potential uses, so that adequate buildable area is provided and adequate room for required setbacks (See Article 7, Section 7.7) and buffer yards (See Article 11) will exist on the Lot.

It should also be noted that redeveloped lots shall meet all applicable criteria previously referenced throughout Article 10, Section 10.1 (Lot Design Standards).

10.2. STREET IMPROVEMENT STANDARDS

10.2.1. PURPOSE

The purpose of this Section is to prescribe minimum design standards for new public and/or private streets as well as certain provisions for existing streets. These requirements may exceed the standards prescribed by NCDOT for the acceptance of streets into the Secondary System of State Highways. The detailed and required engineering design standards supplementing this Section are found in the Technical Standards Manual or *TSM*, Article II, Streets and Pedestrian Paths.

10.2.2. STREET CLASSIFICATION SYSTEM

A. New, existing or proposed streets not already identified on the City of Concord Transportation Plan shall be classified for the purposes of determining the appropriate design of a roadway or development, or for the purpose of determining the appropriateness of a location of a proposed use into one of the “classes” shown in Table 10-2.1. The Administrator in consultation with the Transportation Director shall determine which of the Transportation Plan designations apply to the street under consideration utilizing the criteria of § 10.2.2., the City of Concord Transportation Plan and the narrative descriptions for each roadway classification provided in the City’s *TSM*.

B. The street classification system set forth in Table 10.2-1 is hereby adopted for rural and urban streets. Streets may be further categorized pursuant to the adopted City of Concord Transportation Plan.

Table 10.2-1 Street Classifications with Right-of-Way Widths

Facility Type	Typical Right-of-Way
Freeway/Expressway	>120'
Major Thoroughfare	120
Minor Thoroughfare	100
Collector (residential and non-residential)	60-80'
Residential Street	60'
Residential Lane	50'

C. Determination Criteria

In determining the classification of a street, factors to be considered include the following existing or proposed features:

1. Facility Geometrics, including the number and width of traffic lanes, turning lanes, and parking lanes.
2. Access Conditions, including any restrictions on access, the spacing of private accesses, and average lot frontages.
3. Traffic Characteristics, including average daily traffic volumes (ADT), percentage of trucks, average operating speed, percentage of turning movements, origin-destination characteristics of the traffic, and peak hour characteristics of traffic.
4. In applying these factors, the Administrator may also refer to Table 2-1, *TSM*, Article II, and the sources listed therein, which are hereby incorporated by this reference.

D. Conformity to Adopted Plans

All proposed streets shall conform in alignment to the adopted City of Concord Transportation Plan. The improvement standards of the TSM shall not apply instead of those shown on the Transportation Plan. , Whenever a tract to be subdivided embraces any part of a collector street or thoroughfare so designated on a plan pursuant to NCGS § 136-66.2 (such as the Concord Transportation Plan), such part of the proposed street or thoroughfare shall be platted by the subdivider in the location and right-of-way width indicated on such plan. Stub streets within previously platted subdivisions shall be extended and the street system aligned thereto and to the Transportation Plan.

10.2.3. STREET HIERARCHY

Hierarchy describes the connection of different classifications of streets. For example, very large streets such as thoroughfares may not be connected to residential lanes. However, residential lanes may be connected to Alleys (the next lower classification) or Residential Streets (the next higher classification).

Streets shall be designed to create a hierarchy according to the following standards, provided, however, that the Administrator in consultation with the Transportation Director may recommend design modifications where such modifications are consistent with an adopted access management plan or

necessary by reason of natural features or existing development, and do not create safety hazards or increased maintenance costs:

- A. Local Streets or Local Roads shall intersect with two streets of equal or higher classification, except where otherwise permitted by this Ordinance.
- B. Alleys shall intersect with Residential Collector Streets, Residential Streets, or Residential Lanes.
- C. The Administrator in consultation with the Transportation Director may require a street to be of a collector level design where the anticipated ADT will exceed 1,000 vehicles per day and serves to collect and distribute traffic to the major street system identified on the Transportation Plan.
- D. Reserve strips and cul-de-sac streets that interfere with street connections needed to serve existing or planned developments are prohibited.

10.2.4. PUBLIC STREETS

- A. Public streets shall be designed and constructed in accordance with the City's TSM, Article II.
- B. All new residential developments shall provide for the installation of traffic calming measure(s) on each residential street within the development where the length of the public street exceeds 1,000 feet. The location and type of traffic calming measure(s) shall be determined by the Planning Department and Transportation Department. Traffic calming measure(s) include but are not limited to traffic circles, roundabouts, bulb-outs, chicanes, median islands, and on-street parking (see Appendix A Traffic Calming Reference Guide of the Traffic Calming Policy for definitions and additional details on these measures).

For public streets in existing neighborhoods, traffic calming measure(s) are implemented in accordance with the Traffic Calming Policy.

- C. Pursuant to NCGS § 136-66.2 where a proposed subdivision abuts an existing street or roadway included in the City or North Carolina Department of Transportation street system, the applicant is required to dedicate at least one-half of the land necessary to comply with the minimum right-of-way width

requirements referenced in the Transportation Plan and or the City's TSM, Article II, §2, or the applicable regulations of the North Carolina Department of Transportation, whichever is greater.

- D. Where a subdivision abuts an existing street or roadway included in the City or North Carolina Department of Transportation street system and, where permitted, is designed to utilize such street for frontage and direct access, the subdivider shall be required to improve such street in accordance with the design requirements of the Transportation Plan and/or the City's TSM, Article II or if the street is on the State Highway System, the adopted regulations of the North Carolina Department of Transportation.

10.2.5. PRIVATE STREETS

- A. Private streets that develop as part of a subdivision, or integrated commercial, industrial, multi-family residential or institutional development shall be designed and constructed to the public street standards set forth in the City's TSM. Private streets that develop within a new residential subdivision shall also include traffic calming measures in accordance with public street requirements stated in Section 10.2.4, Part B of this Article. Private streets (with established right-of-way) shall be designed in accordance with the standards set forth in Article 10 and the TSM. This Section shall not include private access ways/driveways as regulated in 10.3.

For private streets in existing neighborhoods, traffic calming measure(s) are implemented in accordance with the Traffic Calming Policy

- B. A legally responsible organization (i.e. homeowners association, other legally recognized association, etc.) as acceptable to the Administrator shall be established to maintain a private street(s). Documents to assure private responsibility of future maintenance and repair by a homeowner's association or other legally recognized district shall be approved as to form by the City Attorney (this will constitute a contract)

10.2.6. STREET CONNECTIVITY REQUIREMENTS

- A. The City Council hereby finds and determines that an interconnected street system is necessary in order to protect the public health, safety and welfare; in order to ensure that streets will function in an interdependent manner; to provide adequate

access for emergency and service vehicles; to enhance non-vehicular travel such as pedestrians and bicycles; and to provide continuous and comprehensible traffic routes. [For reference, see Institute for Transportation Engineers, ITE Transportation Planning Council Committee 5P-8, Traditional Neighborhood Development Street Design Guidelines (June 1997).]

B. All proposed streets shall be continuous and connect to existing or platted streets without offset with the exception of cul-de-sacs as permitted and except as provided below. Whenever practicable, provisions shall be made for the continuation of planned streets into adjoining areas.

C. The street network for any subdivision shall achieve a connectivity ratio of not less than 1.40 (see examples in Figure 10.2-1). One greenway/pedestrian connection per subdivision may be used to substitute one link in order to achieve the connectivity ratio. Such a connection shall be reviewed and approved by the Administrator.

Nodes include 1) intersections of at least two distinct roadways or the allowed greenway/pedestrian connection with three distinct roadway or greenway/pedestrian branches to each intersection and 2) the ends of cul-de-sac roads. A link is a connection between nodes except for the connection to a cul-de-sac node. For purposes of this subsection, the street links and nodes within the collector or thoroughfare streets providing access to a proposed subdivision shall not be considered in computing the connectivity ratio.

Figure 10.2-1 Examples of Street Connectivity Ratio as applied

Example 1: Subdivision that does not meet the ratio (7 links/8 nodes = 0.88 ratio)

Example 2: Same development modified to meet ratio (14 links/7 nodes = 2.00)



D. Residential streets shall be designed so as to minimize the block length of local streets, to provide safe access to residences with minimal need for steep driveways and to maintain connectivity between and through residential neighborhoods for vehicular and pedestrian traffic.

E. Where necessary to provide access or to permit the reasonable future subdivision of adjacent land, rights-of-way and improvements shall be extended to the boundary of the development. A temporary turnaround may be required where the dead end exceeds 250 feet or one lot width in length, whichever is less. The platting of partial width rights-of-way shall be prohibited except where the remainder of the necessary right-of-way has already been platted, dedicated or established by other means.

F. Exemption. New subdivisions that intend to provide one new cul-de-sac street shall be exempt from the connectivity ratio standard as set forth in this Section, provided the Administrator determines:

1. No option exists for providing stub streets due to topographic conditions, adjacent developed sites, or other limiting factors (Cost shall not be considered to be a limiting factor unless the cost of the stub street exceeds 150% of the cost of a street of similar length in the subdivision. Cost estimates must be certified by a registered N.C. engineer.); and

2. Interconnectivity (use of a looped road) within the development cannot be achieved or is unreasonable based on physical constraints of the property to be developed. Constraints include topography, hydrologic features, and no options to connect to adjacent developed sites. Cost shall only be considered as provided in 10.2.6 F.1. immediately above.

3. Conservation subdivisions shall also be exempt from the connectivity ratio requirements in part C of this Section, provided they have at least two access points that provide connections to distinct roadways and/or an adjacent development

10.2.7 DRIVEWAY (ACCESS) PERMITS REQUIRED

A driveway access permit is required prior to the construction of any new access point to a publicly maintained street. Refer to Section 10.4. Driveway Provisions. Applicants for preliminary subdivision plat or site plan approval shall submit copies of any driveway permit applications with the application for development approval.

10.2.8. ACCESS MANAGEMENT STANDARDS

A. Scope: The purpose of regulating the number, spacing and design of vehicular access points is to balance the need for providing access to individual private properties with the need to preserve an adequate level of capacity on the streets providing access.

All proposed vehicular access points that connect to a public street shall conform to the Access Management provisions of City's TSM, Article III. This Section applies to all driveways or access points to be maintained on private property, including that portion of a private driveway that connects to a public street and extends to the edge of the public right-of-way.

B. Permits are required for connections to public streets. Permits for connection to State-owned and State-maintained streets are issued by the NCDOT for a connection to any State Highway (19A NCAC §§ 2B.0601-2B.0605). A driveway permit is required in accordance to the requirements of the TSM for any connection to a City-maintained street.

C. If ingress and egress are the same, off-street parking spaces shall be connected to a public street by a paved driveway which affords safe and convenient ingress and egress provided, however, that the Administrator may waive this requirement where:

1. The driveway is connected to an adjacent driveway or series of driveways with access to a public street, and
2. The applicant has a valid easement providing for access to all driveways leading to the public street.

D. The standards found in the TSM, Article III, shall be used to determine the adequacy of lot layouts so that safe and adequate access to each lot is provided. Vehicular access restrictions shall be required to be shown on subdivision plats.

E. Secondary Access.

Secondary access shall be provided for major subdivisions of 100 or more lots. Secondary access streets shall be routed to avoid hazard areas such as floodways.

F. Substandard Access.

Where access meeting the spacing guidelines of this Section or *TSM* cannot be provided, the Administrator shall consider the following standards in determining whether a substandard access location may be permitted if such action shall not be contrary to the public interest and / or shall not be detrimental to the public health or general welfare of the traveling public. The request for substandard access shall be submitted in writing to the City.

1. The Administrator shall first determine whether alternate access is available. Alternate access includes:
 - a. Access to another street that meets the standards of the Ordinance; or
 - b. Access provided jointly with an adjacent property that will meet the standards of this Ordinance.
2. Where alternate access opportunities are determined not to exist, the Administrator may grant a reduction in spacing standards of up to 20 percent.
3. If after considering alternatives above, the Administrator, Director of Engineering, and Transportation Director determine no feasible alternative exist, a substandard access permit may be granted only subject to the provision of a maintenance guarantee.

10.2.9. BACKING MOVEMENTS PROHIBITED

Parking spaces that force a vehicle to back out into a public street are prohibited except for private residential driveways.

10.2.10. EMERGENCY VEHICLE ACCESS

A. Purpose

The purpose of this Section is to ensure that all premises shall be readily accessible for emergency service vehicles, particularly fire-fighting equipment.

B. Emergency Access Required

For developments without frontage on a public street, access for fire vehicles and emergency apparatus from a public street shall be provided as follows:

1. Except as provided by this § 10.1.9, a fire lane shall be required to provide access to any portion of any structure which is more than:
 - a. 150 feet from the nearest street right-of-way when the structure is thirty 30 feet or less in height; or
 - b. 50 feet from the nearest street right-of-way when the structure exceeds 30 feet in height.
2. When fire vehicles and emergency apparatus are provided access to any portion of a structure more than the distance from a street right-of-way specified in above, by means of either buffer yard area or adjoining property, the requirements of this § 10.1.9 may be waived by the Administrator, after consultation with the fire chief.

10.2.11. ACCESS DRIVEWAY STANDARDS

A. Access Driveway Width

The width of driveways shall be measured at the point of intersection with the public street right-of-way. Driveway width shall be regulated in accordance with *TSM* Article III , unless the Administrator determines the width should be expanded as set forth below. Medians shall not be included in the calculation for the width of driveways. Where no right-of-way exists, the Administrator shall determine the most appropriate location for the measurement. The Administrator may waive these requirements only under the following conditions:

1. The Administrator determines that a wider turning area is needed in order to avoid a traffic hazard,
2. The Administrator determines an appropriate distance from the point of intersection with the public street right-of-way where the driveway shall conform to the dimensional requirements of 10.2.2,
3. The design of the driveway is such that it progressively decreases in width to conform to the width as determined in Table 10.2.2.

Review and final approval of any proposed driveway design that does not conform to the dimensional limitation shall be under the

authority of the Administrator upon recommendation from the City Transportation or Engineering Director, or his designee.

10.2.12 SIDEWALK, CURB, AND GUTTER EXCEPTION

A. The Transportation Director, Engineering Director, and Administrator, may grant an exception from the sidewalk, curb, and gutter requirements if either or both of the following scenarios exists:

1. Topography does not allow for the reasonable or practical installation of sidewalks, curbs, and gutters; and/or
2. There is a funded transportation improvement project for the City of Concord or NCDOT, and the developer's improvements (infrastructure) would be affected.

Refer to Section 6.1.4-C.2 for development or expansion of 10% or less.

B. Application for Exception

A written application for a sidewalk, curb, and gutter exception is required and shall be submitted to the Development Services Department.

C. All exceptions are be subject to the following conditions:

1. The developer would be required to pay a fee-in-lieu of the required installation.
2. The fee would be calculated annually, based on actual costs for typical construction during the previous fiscal year at a rate of 110% to cover administrative costs and the cost of inflation.
3. The fee shall be put into a Sidewalk, Curb, and Gutter Reserve Account administered by the City of Concord.
4. The Reserve Account shall only be used for the construction of sidewalks, curbs, and gutters at locations within the same Sidewalk Maintenance Routes/ Zones as the project where the exception was granted.
5. Paying into the Reserve Account does not release a developer from providing any required rights-of-way and/or easement dedications.

6. If a developer provides an alternate walkway system that has been approved by the Administrator and Transportation Director, no sidewalk or sidewalk fee is required.

D. Appeal

An appeal from the decision of the Administrator / Transportation Director may be made to the Board of Adjustment. This appeal will be treated and processed as an appeal of a staff decision and follow the requirements of Section 6.3.5. , Appeals of Administrative Decisions.

10.3. PARKING AND LOADING

10.3.1. General Standards

A. Applicability

The provisions of this Section shall apply to any application for Zoning Clearance or Site Plan approval, except for developments in the CC zoning district.

B. Front Yard Parking Standards

1. Applicability

Parking is permitted in the front yards of any single family, duplex, triplex or quadplex dwellings in any zoning district other than agricultural.

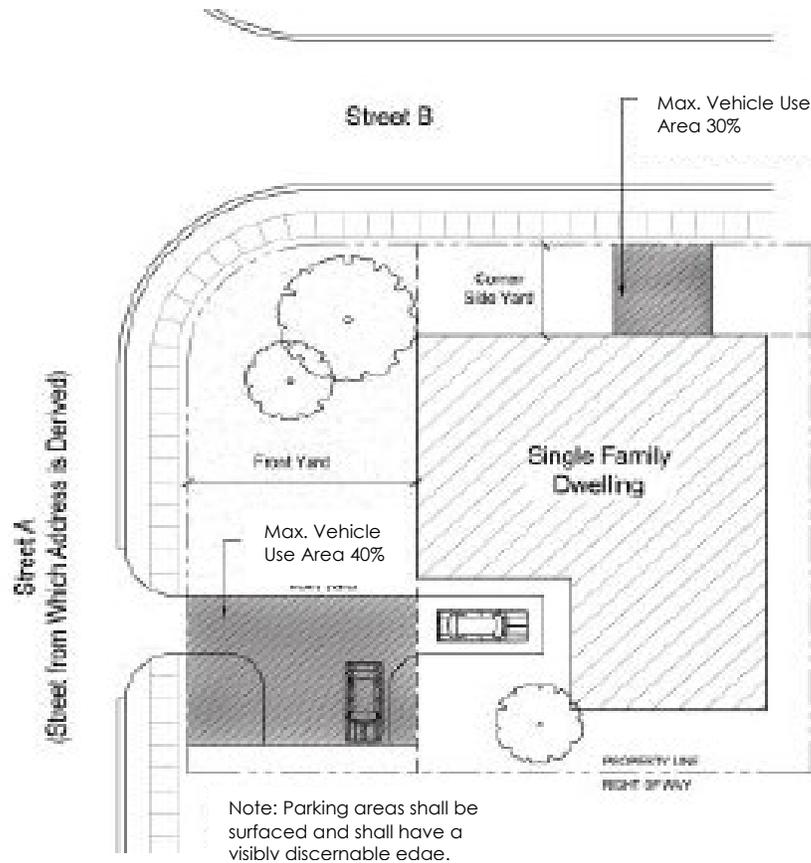
2. General

No person shall park or store any motor vehicle, boat, trailer or recreation vehicle in the front yards (between the street and a line drawn parallel to the street from the point of the dwelling that is closest to the street) other than completely upon an improved driveway or improved parking pad.

3. Coverage of Improved Area

Improved parking and drive areas shall not exceed 40% of the structure's front yard, except that front-load townhouse units with 20-foot wide driveways may exceed 40% maximum provided that all other development regulations in this Ordinance and the infrastructure requirements of the Technical Standards Manual (TSM) are met. (See Section 7.7.4.E). Access to the improved front yard area shall be limited to properly approved curb cuts or

other approved access points. Improved parking and drive areas shall be maintained in a safe and sanitary condition, and shall not contribute to soil erosion or tree damage. Proposed improved parking area shall be installed so as to avoid creating standing water conditions, diverting runoff onto neighboring property owners, or adversely impacting stormwater water quality.



4. Surfacing

Improved parking or vehicular use areas shall be surfaced with asphalt, concrete, brick or other suitable pavers. Gravel or crushed stone may be used if the gravel is at least two (2) inches deep throughout the vehicular use area, and the vehicular use area has a visible and definable edge made of landscape timbers, metal edging, vegetation such as low shrubs or decorative grasses, or similar technique to distinguish the vehicular use area from the front or corner side yard area.

5. Exceptions

a. Parking in the front yard may be allowed for a special event or circumstance but will require a permit issued by the Chief of Police for such event or circumstance. Permitted events will be limited to two per year per residence.

b. The prohibitions shall not apply to emergency and public service vehicles whose operators are performing services for which they are responsible, nor do these prohibitions apply to vehicles belonging to persons under contract with the City to perform a public service. However, this exception shall apply only when an emergency situation requires that such vehicles park in the prohibited area.

6. Application for a Zoning Clearance Permit

A zoning clearance permit is required for any front yard parking spaces constructed on a parcel in accordance with Article 6.1.4. A plot plan of the property showing the driveway location along with any other structures is required.

7. Principal Use Compliance

Parking areas which constitute the principal use of a site shall comply with the parking lot layout and design provisions, but not the minimum number of spaces as required in 10.3.2.

8. Modification to Required Parking or Loading Areas

The area reserved for off-street parking or loading in accordance with the requirements of this Article shall not be reduced in area or changed to any other use unless the permitted use which it serves is discontinued or modified. Street parking allowed adjacent to any land use shall not reduce the off street parking requirements where required, except as permitted in a TND development per Article 9.4.

C. General Design Standards for Non-Residential and Multi-family Development

1. Location

Required off-street parking area(s) shall be provided on the same parcel as the principal structure or use,

unless shared parking is provided as set forth in § 10.3.2 F.

a. For lots with not more than 200 feet of depth, not more than 50 percent of the parking spaces shall be located in a front yard setback as required in Dimensional and Density Standards Table 7.6-2.A except in zoning districts where front yard parking is not permitted. No parking spaces shall be allowed in a required street yard or buffer yard as required in Article 11.

b. For lots exceeding 200 feet in depth, parking spaces shall not be located within a front yard setback, or within a side yard setback adjacent to a residential zoning district. No parking spaces shall be allowed in a required street yard or buffer yard as required in Article 11.

2. Upfit to existing Public Street Required

New multi-family and nonresidential projects shall be required to provide curb and gutter and sidewalks to adjacent public streets which provide access to the development. Such improvements other related improvements such as Road widening, sidewalks, curb and guttering, utility relocations, and all other related improvements including any necessary right-of-way dedication shall be the responsibility of the developer and/or owner. Unnecessary as design of the upfit should go through site plan review. Design standards for pedestrian upfits to state maintained roads shall be subject to site plan review and approval by the Administrator and Transportation Director City Manager, or his designee, and the NC Department of Transportation. Sidewalks, curb and gutter shall not be required along interstate highways. Exceptions to the sidewalk requirements shall follow those outlined in 10.2.12.

3. Landscaping

Landscaping shall be required in accordance with Article 11, Landscaping and Buffering Standards.

4. Exterior Lighting

Lighting sources shall be designed and constructed so as to direct light away from public rights-of-way and residentially zoned or developed areas.

5. Paving Required

All required parking and vehicular traffic surfaces shall be graded for drainage in accordance with § 4.4 Stormwater Control and shall be surfaced with concrete or bituminous asphalt pavement. Alternative materials may be approved by the Administrator. Alternative materials shall only be considered if such material(s) exhibits equivalent load bearing and wear characteristics as concrete or bituminous asphalt. Other alternatives may include brick, concrete pavers, compacted fines, or stone. In making such a determination, the Administrator may consult the City Manager, or his designee, or other persons with knowledge of paving materials, including the Development Review Committee. All surfaces shall be maintained in sound condition free of weeds, dust, trash and debris.

a. Overflow Parking

Overflow parking areas, event parking areas and/or low-traffic storage yards shall use turf. Overflow parking shall be defined as off-street parking in excess of the minimum required by this Ordinance which is designed not to be used more than 10 times per year.

b. Paving Exemption for Assembly Uses

Paving of parking areas and access ways for assembly uses (churches, sports facilities, fairgrounds, etc.) may be waived if evidence is presented to the Administrator that these spaces will not be used regularly on a daily basis or at least five times per week. Parking areas for which paving is waived shall maintain a turf surface. All parking areas for which paving is waived shall meet the minimum requirements of Volumes I-C and V of the North Carolina State Building Code for

Accessibility and for Fire Prevention. All parking lots shall be constructed with proper drainage.

6. Parking and Storage of Certain Vehicles

a. Automotive vehicles or trailers shall not be parked or stored on any residentially zoned lot without required current license plates other than in enclosed buildings behind the front setback.

b. Tractor-trailers, cargo trucks, and other such heavy equipment shall not be parked or stored in any residential district or on any adjacent public right-of-way other than in an area completely screened from public view. When such vehicles are parked in a commercial or industrial zone, they shall be no closer than 25 feet to any residential district.

10.3.2. Required Amount of Off-Street Parking

Table 10.3-1 establishes the minimum and the maximum number of parking spaces permitted for the uses indicated.

A. Parking Structures Exempted

The maximum parking requirements shall not apply to parking spaces within an above-ground or an underground parking structure. For the purposes of parking calculations, the gross area of any parking garage within a building shall not be included within the gross floor area of the building.

B. Exemption from Required Number of Spaces

The minimum requirement for the number of vehicle parking spaces shall not apply within the following zoning districts:

1. CC City Center
2. TND Traditional Neighborhood Development

C. Uses Not Identified in Table 10.3-1

The Administrator shall determine the parking requirement for uses which do not correspond to the categories listed in Table 10.3-1. In such instances, the applicant shall provide adequate

information by which the proposal can be reviewed, which includes but may not necessarily be limited to the following:

1. Type of use(s);
2. Number of employees;
3. The occupant load (per Building Code) of the building;
4. Square feet of sales area and service area;
5. Parking spaces proposed on-site;
6. Parking spaces provided elsewhere; and
7. Hours of operation.

D. Multiple Uses

In those instances where there are clearly identified accessory or multiple uses within a structure or multiple structures, the minimum standards shall apply to each use or structure, resulting in a total parking requirement when summed, except as provided in paragraph F below.

E. Modification to Required Number of Spaces

In unusual circumstances, the standard parking requirement may not be appropriate. The Administrator shall have the authority to vary the parking requirement, either upward or downward by up to 10 percent, if one or more of the following circumstances exists:

1. Expected automobile ownership or use patterns of employees, tenants, or other users varies from what is typical in the community or typical for the use.
2. The parking demand varies throughout the day in relation to parking supply.
3. The nature of operational aspects of the use warrants unique parking arrangements.

F. Shared Parking

1. Off-street parking requirements of a given use may be met with off-site, off-street parking facilities of another use when, and if, all of the following conditions are met:
 - a. In nonresidential zoning districts, the parking may be up to 500 hundred feet from the principal structure;

b. The parking demands of the individual uses, as determined by the Administrator, based upon minimum off-street parking requirements, are such that the total parking demand of all the uses at any one time is less than the total parking spaces required; and

c. A written agreement between the owners and lessees is executed for a minimum of 10 years, approved by the Administrator, recorded, and a copy maintained in the project file. Should the lease expire or otherwise terminate, the use for which the off-site parking was provided shall be considered to contain nonconforming site improvements. Future expansion of the use shall be prohibited unless the use is brought into compliance with this Section 10.3.

2. Developments which contain a mix of uses on the same parcel, as set forth in Table 10.3-1, may reduce the amount of required parking in accordance with the following methodology: (1) determine the minimum parking requirements in accordance with 10.3-1 for each land use as if it were a separate use, (2) multiply each amount by the corresponding percentages for each of the five time periods set forth in Columns (B) through (F) of Table 10.2-5, (3) calculate the total for each time period (Columns), (4) select the Column with the highest total, and (5) use this number as the required minimum number of parking spaces.

**Table 10.2-5
Shared Parking Allowances by Land Use**

Land Use	Weekday		Weekend		Nighttime*
	Daytime*	Evening*	Daytime*	Evening*	
Office/Industrial	100%	10%	10%	5%	5%
Retail	60%	90%	100%	70%	5%
Hotel	75%	100%	75%	100%	75%
Restaurant	50%	100%	100%	100%	10%
Entertainment/ Commercial	40%	100%	80%	100%	10%

***Key:**

- Daytime (6am – 5pm)
- Evening (5pm – midnight)
- Nighttime (midnight – 6 am)

Table 10.3-1: Required Minimum and Maximum Parking Spaces

Land Use	Min. Vehicle Spaces	Max. Vehicle Spaces
Residential		
Single Family, detached (includes manufactured and modular homes)	2 per parcel	n/a
Duplex (Two units per lot)	2 per unit	n/a
Multi-Family (3 or more units) and attached Single-Family	1.5 per unit	2.5 per unit
Accessory Dwellings	1 per unit	n/a
Family Care Home	2 per parcel	n/a
Institutional and Civic		
Auditorium/Public Assembly	1 per 6 seats or 1 per 50 sf GFA (if no seats)	1 per 4 seats or 1 per 30 sf GFA (if no seats)
Botanical Garden and Nature Preserves	n/a	1 per 125 sf GFA of bldg.
Campground	1 per 6 camp sites, plus 4 per laundry & shower facility	n/a
Child Care Center	1 per 375 sf GFA	1.5 per 375 sf GFA
Civic, Social and Fraternal Organizations	1 per 250 sf GFA	1 per 200 sf GFA
Emergency Service Facilities	1 per employee + 1 per 3 volunteer personnel on normal shift + 1 per 200 sf usable office space	n/a
Golf Course	4 per hole	6 per hole
Golf Driving Range	1 per 2 tees	1 per tee
Governments Buildings	1 per 300 sf GFA	1 per 125 sf GFA
Hospital	1 per 400 sf GFA	1 per 100 sf GFA
Museums and Art Galleries	1 per 1,000 sf GFA	1.5 per 1,000 sf GFA
Park, public	1 per 4 seats	1 per seat
Religious Institutions	1 per 8 seats	1 per 1.5 seats
Residential Care Facilities and Group Homes	0.3 per room	1 per room
Schools - Business, Trade and/or other Vocational	1 per 200 sf GFA	1 per 150 sf GFA
Schools - Elementary and Secondary	1 per classroom	2 per classroom
Schools - University or College	1 per 4 students	1 per 2 students
All other Institutional Uses	1 per 300 sf GFA of bldg.	1 per 125 sf GFA of bldg.
Professional Office/Business Services		
Offices, General	1 per 1,000 sf GFA	1 per 200 sf GFA
Banks (with drive-through)	1 per 300 sf GFA, plus sufficient stacking spaces to accommodate any drive-through lane(s)	1 per 150 sf GFA, plus sufficient stacking spaces to accommodate any drive-through lane(s)
Banks (without drive-through facilities)	1 per 250 sf GFA	1 per 140 sf GFA
Funeral Home and Services	1 per 4 seats	1 per 2 seats
Personal Services (Dry Cleaners, etc.)	1 per 500 sf GFA	1 per 215 sf GFA
Personal Care Services (Hair, skin, etc.)	1 per 200 sf GFA	1 per 100 sf GFA
All other Professional Office/Business Service uses	1 per 300 sf GFA	1 per 150 sf GFA
Retail Trade		
Amusement Arcade	1 per game table, video game or other amusement device	n/a
Amusement Park	1 per 600 sf of outdoor recreation area	1 per 500 sf of outdoor recreation area
Automobile Sales, New and Used (see § 5.6)	1 per 375 sf GFA of sales area, plus 1 per employee, plus 1 per vehicle stored on site	1.5 per 375 sf GFA of sales area, plus 1 per employee, plus 1 per vehicle stored on site

Land Use	Min. Vehicle Spaces	Max. Vehicle Spaces
Automobile Repair/Body Shop	1 per 500 sf GFA including all service areas, plus 1 per employee	1 per 375 sf GFA including all service areas, plus 1 per employee
Bed and Breakfast Inns (see § 5.7)	1 per guest bedroom, plus 2 for owner/operator	n/a
Bowling Centers	2 per lane	4 per lane
Building Material Supply, Greenhouses, Nurseries, Lawn & Garden Supply	1 per 375 sf GFA of sales or service building area	1.5 per 375 sf GFA of sales or service building area
Car Wash (as a principal use), Truck Stops, and/or Travel Plaza	1 per 500 sf GFA including wash bays/tunnels and retail areas	1 per 375 sf GFA including wash bays/tunnels and retail areas
Convenience Store	6 per 1,000 GFA, plus sufficient stacking area to accommodate 2 vehicles per each side of pump island	10 per 1,000 GFA, plus sufficient stacking area to accommodate 2 vehicles per each side of pump island
General Merchandise Stores (less than 25,000 sf GFA)	1 per 300 sf GFA	1 per 200 sf GFA
Grocery/Food Stores	1 per 300 sf GFA	1 per 200 sf GFA
Health Clubs and Fitness Centers	1.5 per 1,000 sf GFA	10 per 1,000 GFA
Hotels, Motels and Extended Stay Facilities	1 per room plus 1 per 800 sf of public meeting area and restaurant space	1 per room plus 1 per 400 sf of public meeting area and restaurant space
Manufactured Home Sales	1 per 100 sf GFA of office area, plus 1 per every 2 employees	n/a
Miniature Golf	1 per hole	2 per hole
Mini-warehouse/Self-storage Leasing (see § 5.15)	1 for every 200 rental spaces (2 required)	n/a
Motion Picture Theater	1 per 6 seats	1 per 4 seats
Motion Picture Theater, drive-in	1 for each viewing space the facility is designed to accommodate	1 for each viewing space the facility is designed to accommodate
Restaurants (with drive-through service and/or carry-out)	1 per every 3 seating accommodation plus sufficient stacking area to accommodate any drive-through lane(s)	1 per 50 sf GFA, plus sufficient stacking area to accommodate any drive-through lane(s)
Restaurants (dine-in only)	1 per every 3 seating accommodation	1 per 50 sf GFA
Shopping Centers/Superstores (25,000-400,000 sf GFA)	1 per 250 sf GFA	1 per 150 sf GFA
Shopping Centers/Superstores (400,001-600,000 sf GFA)	1 per 225 sf GFA	1 per 150 sf GFA
Shopping Centers/Superstores (over 600,000 sf GFA)	1 per 200 sf GFA	1 per 150 sf GFA
Wholesale Trade uses, Manufacturing and Industrial uses		
Contractor's office	1 per 600 sf GFA	n/a
Junk/Salvage Yard	1 per 2 employees at peak shift, plus 1 per 5,000 sf of land area devoted to material storage, plus 1 for each company vehicle at peak shift	n/a
Manufacturing uses	2 per 3 employees at peak shift, plus 1 per each company vehicle at peak shift	n/a
Mining and Extractive Uses	1 per employee at max. shift, plus 1 per each company vehicle at peak shift	n/a

Land Use	Min. Vehicle Spaces	Max. Vehicle Spaces
Wholesale sales and all other Industrial uses	1 per 400 sf GFA of sales and office area, plus 1 per each company vehicle at peak shift or 2 per 3 employees at peak shift, plus 1 per each company vehicle at peak shift (use whichever is greater)	n/a
Transportation, Warehousing and Utility uses		
Air, Rail or Bus Terminal	1 per employee, plus spaces required to satisfy projected peak parking demands	n/a
Communications Tower/Antenna	none (see § 5.21)	n/a
Truck Terminal	1 per employee at peak shift, plus 1 per each company vehicle at peak shift	n/a
Warehouse and Storage	1 per 400 sf GFA of sales and office area, plus 1 per each company vehicle at peak shift or 2 per 3 employees at peak shift, plus 1 per each company vehicle at peak shift (use whichever is greater)	n/a
Utility uses	1 per employee at peak shift, plus 1 per each company vehicle at peak shift	n/a

10.3.3. OFF-STREET LOADING AND UNLOADING AREA STANDARDS

A. Scope

There shall be provided on the same lot with each nonresidential building or structure, adequate space for off-street loading, unloading and the maneuvering of shipping and delivery vehicles. Off-street maneuvering space shall be provided so that no backing onto or from a public street is required. All loading and maneuvering areas shall:

1. be surfaced with pavement, concrete or equivalent,
2. be properly drained,
3. be designed with regard to pedestrian safety,
4. have direct access to public streets, and
5. shall be screened from adjacent residentially zoned or developed property as provided in Article 11, Landscaping and Buffering.
6. No loading docks shall be visible from a thoroughfare or collector street right-of-way.

B. Required Amount

1. The Uses required to provide off street loading/unloading space and, the quantity and size of said space required shall be:

a. Retail and service establishments

One loading space with minimum dimensions of 12 feet by 25 feet for every 20,000 square feet of Gross Leasable Area rounded off to the nearest 20,000.

b. Office buildings and lodging establishments

One loading space with minimum dimensions of 12 feet by 25 feet for every 50,000 square feet of Gross Leasable Area rounded to the nearest 50,000. If only standard size service/delivery vehicles are used, then one standard sized parking space may be substituted at the Administrator's approval.

c. Industrial/manufacturing and wholesale establishments

Industrial/manufacturing and wholesale establishments shall provide the following loading spaces with a minimum dimension of 12 feet by 25 feet:

Building Size	Loading Spaces
Up to - 50,000 sq. ft.	1 space
50,000 - 120,000 sq. ft.	2 spaces
120,000 - 220,000 sq. ft.	3 spaces
220,000 - 350,000 sq. ft.	4 spaces
350,000 - 550,000 sq. ft.	5 spaces
550,000 - 850,000 sq. ft.	6 spaces
Each additional 400,000 sq.ft.	1 additional space

2. Off street loading/unloading areas shall be located such that interference with traffic on Streets is minimized (subject to approval by the Administrator).

3. No off street loading/unloading space shall be sized such that any reasonably anticipated vehicle utilizing the space will protrude into any required Parking Space and/or Street right-of-way.

10.3.4 Bicycle Parking

- A. **Purpose.** Bicycle parking requirements are intended to encourage the use of bicycles to promote healthy mobility options and improve the public health safety and welfare through improved air quality, reduced energy consumption and more efficient use of vehicular parking areas.
- B. **Applicability.** The bicycle parking requirements of this section shall apply to all new development, additions to existing development and redevelopment of commercial property as defined in section 7.10.2.
- C. **General Requirements.**
 - 1. Bicycle parking shall be provided in accordance with the standards of this section and shall be made available prior to the issuance of any Certificate of Occupancy for the use being served.
 - 2. Covered bicycle parking is encouraged wherever the design of the building or use being served by the bicycle parking facility includes a covered area that could accommodate such facilities either as proposed or through economical redesign.
 - 3. Bicycle parking located within a parking garage must be located within 50 feet of a pedestrian access point which includes an elevator, stairwell, or first floor sidewalk connection. If the bicycle parking is located within an enclosed room within the parking structure, the distance requirement to an elevator, stairwell, or pedestrian entrance is no more than 200 feet.
- D. **Number of Spaces Required.** The minimum number of bicycle parking spaces required is shown in Table 10.4-1. When the calculation of the number of required bicycle parking spaces results in a fractional number of spaces, any fraction up to and including 0.5 shall be disregarded and any fraction over 0.5 shall require one bicycle parking space. For any use not listed in Table 10.4-1, bicycle parking spaces may be substituted for vehicle parking spaces at a rate of 8 bicycle parking spaces per vehicle parking space. The maximum substitution shall be 5% of the vehicle parking spaces required under this Part or 10 spaces, whichever is greater.

Table 10.4-1: Minimum Number of Bicycle Parking Spaces Required

Land Use	Minimum Number of Bike Parking Spaces
Retailing, Eating & Drinking	4 spaces plus 1:7,500 sf GFA
Health, Fitness, or Sports Club	4 spaces plus 1:10,000 sf GFA
Office	4 spaces plus 1:15,000 sf GFA
Hotels/Motels	1:30 Rooms
Warehouse, Manufacturing & Processing	4 spaces plus 1:50,000 sf GFA
Self-Storage Facilities	4 spaces
Schools - High	3:1 classroom
Schools - Elementary & Middle	4:1 classroom
Schools -College, University, Adult	1:5 classrooms
Hospitals	8 spaces plus 1:50,000 sf GFA
Medical Office, Laboratory, or Clinic (Including Veterinarian)	1 per 5 employees
Libraries, Museums, Theaters, Bowling Alleys, Skating Rinks, Community Center	8 spaces plus 1:5,000 sf GFA
Multi-family Dwellings	1:5 units
Religious Institution	4 spaces plus 1:10,000 sf GFA

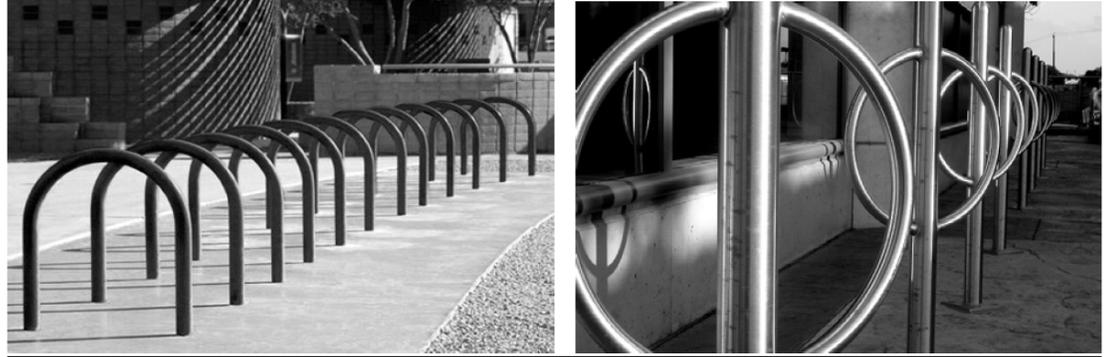
E. Location. Bicycle parking spaces shall be located within 50 feet of the main entrance to the building as measured along the most direct pedestrian access route. For a building with more than one entrance, the bicycle parking must be distributed along all facades with a main entrance and located within fifty (50) feet of at least one main entrance, as measured along the most direct pedestrian access route.

F. Design.

1. **Bicycle Parking Space Design.** All bicycle parking spaces shall comply with the following standards:
 - a. Minimum aisle width: sixty (60) inches, to allow for access and maneuvering.

- b. **Accessibility:** Accessible to users without climbing or descending stairs.
 - c. **Safety:** Separated from vehicle parking spaces by physical barriers, such as curbs, wheel stops, bollards or other similar features, to protect bicycles from damage.
 - d. **Site Coordination:** Consistent with the design, color and character of the buildings, street furniture and other features on the building site, but clearly discernible as bicycle parking.
 - e. **Design:** Enable users to lock the frame and both wheels.
 - f. **Construction:** Anchored, so that they cannot be easily removed.
 - g. **Distance:** Bicycle racks not be placed closer than thirty (30) inches from each other and not closer than thirty-six (36) inches from walls or any other obstructions.
 - h. **Style:** The inverted "U" style bicycle rack that can hold two bicycles is the preferred type of rack (also known as a "staple", "hoop", or "U" rack). Bicycle racks that are prohibited in the City of Concord are the wave, comb, schoolyard, coat hanger, wheel well, and bollard style as defined in the Association of Pedestrian and Bicycle Professionals', Essentials of Bike Parking, Rev. 1, 2015.
2. **Standard Bicycle Rack Design.** All standard bicycle racks shall comply with the following standards:
- a. **Maximum rack height:** thirty-six (36) inches.
 - b. **Minimum depth for each row of parked bicycles:** seventy-two (72) inches.
 - c. **Minimum separation between horizontal rows:** thirty (30) inches on center to allow enough room for two (2) bicycles to be secured to each rack element.
 - d. **Capacity:** Designed to accommodate (2) or more bicycle parking spaces per rack.
 - e. **Finish:** Powder coated, or other weather-proof surface, as approved by the Transportation Official.
 - f. **Simplicity:** Easy to understand and operate, with no moving parts.

- g. Operation: Usable without lifting the bicycle onto the device.
(Applies to Short-Term racks only).



Images: Examples of Standard Bicycle Rack Designs

- 3. **Alternative Bicycle Rack Design.** Alternative bicycle parking rack designs may be approved, in compliance with the following standards:
 - a. Size: Accepts multiple bicycle frame sizes and styles.
 - b. Compatibility: Accommodates the use of cable and U-type locks.
 - c. Purpose: Allows the frame and at least one (1) wheel of the bicycle to be locked to the rack.
 - d. Scale: Visible to pedestrians and the visually impaired, but consistent with the scale of the bicycle locked to the device.
 - e. Durability: Maintenance-free or fabricated from materials that weather in an aesthetically pleasing manner.
 - f. Simplicity: Easy to understand and operate, with no moving parts.
 - g. Operation: Usable without lifting the bicycle onto the device.

10.4 PRIVATE DRIVEWAY PROVISIONS

10.4.1. SCOPE

A. All proposed vehicular access points to connect to a public street shall conform to the Access Management provisions of this § 10.4 , as well as applicable sections of Article 10 and the City's TSM. This § 10.4 shall apply to all driveways or access points to be maintained on private property. The provisions of shall regulate that portion of a private driveway that connects to a public and extends to the edge of a public right-of-way.

B. If ingress and egress are the same, off-street parking spaces shall be connected to a public street by a paved driveway which affords safe and convenient ingress and egress provided, however, that the Administrator may waive this requirement where:

1. the driveway is connected to an adjacent driveway or series of driveways with access to a public street, and
2. the applicant has a valid easement providing for access to all driveways leading to the public street.

C. Driveway Width

Refer to § 10.2.11

10.5. OPEN SPACE STANDARDS

10.5.1. PURPOSE

Open spaces preserve natural resources and provide areas for active and passive recreation in developed areas.

10.5.2. APPLICABILITY

Open space, as defined in Article 14, shall be reserved in major subdivisions of land, planned unit developments, planned residential developments, traditional neighborhood developments, and developments requiring site plan review in accordance with Article 5. Buffers and setbacks required in Article 4 and active open space shall not overlap. Passive open space may overlap buffers and setbacks in required in Article 4 that are located outside of the floodway. Active open space shall not overlap the planting yards required in Sec. 11-3. Passive open space may overlap buffer yards and street yards required in Sec. 11.4 and 11.7. Developments that meet all of the following criteria shall not be subject to the requirements of this Section:

- A. Contains less than thirty (30) proposed dwelling units, and
- B. Located less than ½ mile of walking distance from an existing or planned public park (or a public school with recreation facilities accessible to the general public), and
- C. Includes a proposed connection to the park or school by a sidewalk or greenway trail.

10.5.3. REQUIRED IMPROVEMENTS

Land designated as open space shall be maintained as open space and may not be separately sold, subdivided, or developed except as provided below. Developers shall be responsible for making certain improvements to the land they dedicate as open space within their development for park, playground, public active open space, and other open space purposes as follows:

- A. Provide finish grade and turf establishment for all disturbed areas and provide landscaping and/or screening in accordance with Article 11 and the Manual.
- B. Complete, construct, and surface walkways, which may be required as trail connectors in accordance with this Section. Such walkways may be within or abutting residential street rights-of-way. Such connections shall not be used in the financial investment described in Item (2).
- C. Complete and construct improvements as set forth in Table 0.2 below.
- D. The size of open space(s) required shall be the minimum shown in Table 10.5.13. below.
- E. Establish tree save areas in accordance with Section 11.9; tree save areas may be counted towards passive open space.
- F. Provide any other recreational areas and associated facilities as required by the Planning and Zoning Commission.

10.5.4. USE OF STORMWATER DETENTION BASINS

Retention areas or detention basins, which may be required as part of Article 4 shall not qualify as open space for residential developments unless:

- A. Fifty percent (50%) or more of the active and usable area is above the area submerged during a ten (10) year storm, and
- B. The detention basin is designed for multiple uses and the usable areas conform to all of the requirements of this Subsection, (d).
 - 1. Retention or detention areas may meander through the development rather than exist as a single basin. Retention areas shall be improved so as to be usable and accessible. Detention areas shall not be permanently inundated so as to be unusable for their designated recreational purposes.
 - 2. Retention or detention areas shall be given a natural character and shall be constructed of natural materials. Terracing, berming, and contouring are required in order to naturalize and enhance the aesthetics of the basin. Basin slopes shall not exceed a 3:1 slope.

10.5.5. SIZE

Unless otherwise specified below, open spaces shall be reserved based on zoning districts and proposed densities and equal or exceed the minimum total land area identified in Table 0.1. The minimum dimension for usable open space shall be fifty (50) feet in width, excluding areas reserved for trails, medians, greenways, and sidewalks that meet the intent of this ordinance and have a minimum dimension of 15 feet. If the open space includes agricultural areas, the agricultural areas shall have a contiguous area of not less than fifty (50) acres. The agricultural areas may be combined with adjacent agricultural lands provided, however, that the minimum width prescribed above shall be met on all portions of the agricultural open space. If the required open space area cannot be reserved, developers may apply for an exemption and pay the required in-lieu-of fee in accordance with Table 0-1.

10.5.6. OPEN SPACE REQUIRED

Open space shall be required in all developments as set forth in Table 0-1.

10.5.7. LOCATION

A. Distance to Dwellings

Open space shall be located within one-quarter (1/4) mile radius from each buildable lot within the proposed development. This radius shall be measured in a straight line, without regard for street, sidewalk or trail connections.

B. Connectivity

The Administrator may require connection to a community open space network and/or trails system if the proposed development is adjacent to the boundary of an established community public open space as included in the Livable Communities Blueprint for Cabarrus County or any other park, recreation, greenway, or open space plan adopted by the City Council, which are all hereby incorporated by reference as if set forth in their entirety herein.

C. Accessibility

Active open space areas shall be accessible to all residents of the development. Accessibility to pedestrians within the proposed development shall be provided by one of the following means. Upon review of the design by the Administrator, additional pedestrian access points may be required.

1. Access shall be provided via frontage on a public street right-of-way containing a sidewalk; or

2. Access shall be provided via a recorded pedestrian easement (minimum 15 feet wide).

D. Contiguity

At least sixty percent (60%) of the required open space shall be in a contiguous tract. For the purposes of this Section, contiguous shall include any open space bisected by a residential street (including a residential collector), provided that:

1. A pedestrian crosswalk is constructed to provide access to the open space on both sides of the street; and
2. The right-of-way area is not included in the calculation of the minimum open space required.

10.5.8. MAINTENANCE

A. Open-space areas shall be owned, preserved, and maintained as approved by the City Council by any of the following mechanisms or combinations thereof:

1. Dedication to the City, an appropriate public agency, or a non-profit entity (such as a land conservancy) if such an agency or entity is willing to accept the dedication and is financially capable of maintaining such open space, or
2. Common ownership by a property owners' association, which assumes full responsibility for the maintenance of the open space. In the event the association fails to maintain the open space according to the standards of this Ordinance, the City may, following reasonable notice:
 - a. Demand that the deficiency of maintenance be corrected; or
 - b. Enter the open space to perform the needed maintenance. The cost of such maintenance shall be charged to the association.

B. Open-space areas shall be maintained so that their use and enjoyment as open space are not diminished or destroyed.

1. **Active Open Space.** Maintenance shall include ensuring that there exist no hazards, nuisances, or unhealthy conditions.
2. **Passive Open Space.** Maintenance for passive open space areas that are not designated tree save areas, as

defined in Article 11, shall include the removal of litter, dead tree and plant materials (that is obstructing pedestrian movement), and brush; weeding; and mowing. Human-made litter and debris shall be removed from passive open space areas that are tree save areas. For all passive open space areas, litter and debris shall not inhibit the flow of natural watercourses. Stream channels shall be maintained so floodplains elevations remain unchanged.

3. Open Space on Farms. No specific maintenance is required for open space with agricultural uses. No specific maintenance is required for open space with forestry uses provided that a current forest management plan is filed with and approved by the appropriate State agency.

4. Greenways. Greenways connecting residences, schools, and recreational areas are encouraged. Maintenance shall include the removal and avoidance of hazards, nuisances, or unhealthy conditions.

10.5.9. SUBMITTAL REQUIREMENTS

All areas reserved as open space shall be delineated and labeled on required preliminary and/or final subdivision plats, and required site plans.

10.5.10. OPEN SPACE PROVISION AND MAINTENANCE PLAN

An Open Space Provision and Maintenance Plan shall be submitted as a part of the application for development approval including the project-phasing schedule. The plan shall:

- A.** Designate areas to be reserved as open space. The location and use of open-space areas shall be sensitive to the physical and design characteristics of the site.
- B.** Designate the type of open space that will be provided (passive or active) and identify tree save areas, as defined in Article 11.
- C.** Specify the manner in which the open space shall be perpetuated, maintained, and administered.

10.5.11. UTILITY RIGHTS-OF-WAY

Open space may be located within a utility right-of-way provided that permanent structures and other obstructions are not located in the right-of-way.

10.5.12. OPEN SPACE FEE-IN-LIEU

A. In lieu of land dedication, the Planning and Zoning Commission or City Council may permit the developer to contribute a cash payment to the City. The value of such payment shall be 300 percent of the pre-development tax value of the required open space area.

B. If, at the option of the Planning and Zoning Commission, it is determined that a cash dedication may be made, said cash shall be paid to the City Finance Director and shall be deposited into a special Parks and Recreation Service Area fund prior to final plat approval. Money in the fund, including accrued interest, shall be expended solely for acquisition, development, or rehabilitation of recreational lands or improvements related thereto.

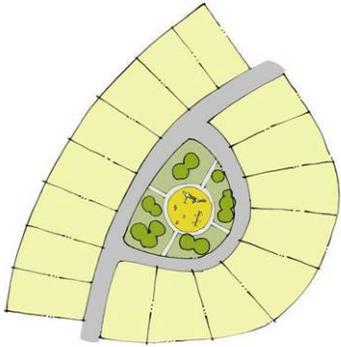
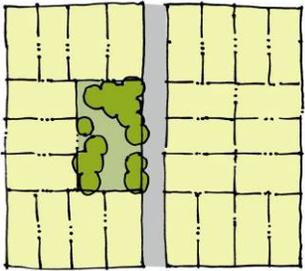
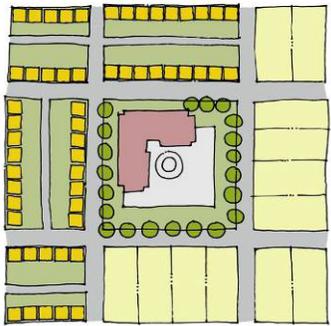
C. Collected fees shall be appropriated by the City for a specific project to serve residents of the subdivision. Collected fees shall be expended within a budgetary year no more than ten years after the receipt of the recreation improvement request. If such fees are not so committed, these fees shall be distributed and paid to the then record owners of the subdivision in the same proportion that the size of their lots bears to the total area of all lots in the subdivision.

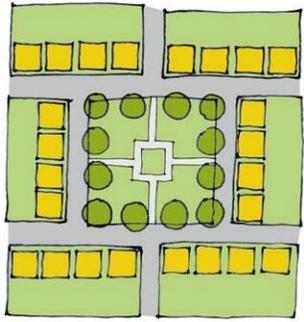
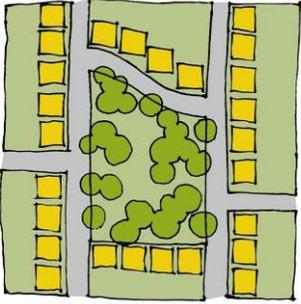
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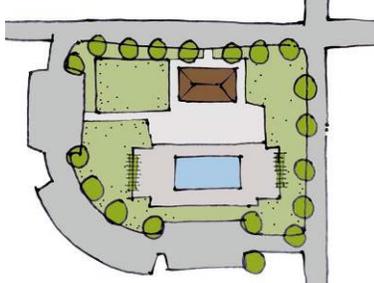
10.5.13. Tables

Zoning District(s)	Total Percentage of Open Space
AG	N/A
CS	See Table 9.13-1
RE, RL, RM-1, RM-2, RV and RC	10%(0 - 2 units per acre)* 15% (2.1 - 4 units per acre)* 20% (greater than 4 units per acre)*
B-1, O-I, CC, C-1, C-2, I-1 and I-2	N/A
PUD, PRD	20% (up to 4 units per acre)* 25% (greater than 4 units per acre)*

TABLE 0-2

Category	Description	Required Improvements	Illustration
Tot Lot Playground	<p>Tot lots and playgrounds provide play areas for children, open shelters, and benches.</p> <p>Playgrounds may be located within squares, greens, mini-parks, and neighborhood parks or may stand alone within a residential block.</p>	<p>Improvements shall include commercial-grade play equipment for two age groups - a tot lot for children ages 1-5 with separate play equipment for children ages 6-10, including at least 2 park benches, and 1 trash receptacle. Improvements may include picnic units and shelters. Areas with playground equipment shall have a shock-absorbing surface with a maximum 2% slope. ^{1 2 3}</p>	
Mini-Park	<p>Mini-parks provide active recreational facilities for the use of the residents in the immediate surrounding neighborhood within the development.</p> <p>Mini-parks may range in size from 2,500 ft² to 1 acre.</p>	<p>Improvements may include tennis courts, basketball courts, playgrounds, and seating accommodations. Each mini-park shall be centrally located and easily, conveniently, and safely accessible by those persons in the neighborhood it is designed to serve. Rear facing lots are allowed. Mini-parks shall be attractively landscaped and provided with sufficient natural or man-made screening or buffer areas to minimize any negative impacts upon adjacent residences. ^{1 2 3}</p>	
Plaza	<p>Plazas provide areas for passive recreation adjacent to civic or commercial buildings.</p> <p>Plazas may range in size from 2,000 to 30,000 ft².</p>	<p>Improvements may include brick or some other type of paved block surfacing. Plazas shall be level, stepped, or gently sloping. At no time shall the horizontal length or width be greater than 3 times the height of surrounding buildings.</p>	

Category	Description	Required Improvements	Illustration
Square	<p>Squares provide formal areas for passive recreation bound by streets or front facing lots.</p> <p>Squares may range in size from 500 ft² to 1 acre.</p>	<p>Improvements may include trees plantings, which are encouraged parallel to the street right-of-way.</p> <p>Geometrical tree planting layouts for internal plantings are also encouraged. Squares shall be bound by streets on a minimum of three sides or 75% of their perimeter, and may be bound by front facing lots on one side or 25% of their perimeter. No rear facing lots shall be allowed adjacent to a square.</p>	
Green	<p>Greens provide an informal area for passive recreation bound by streets or front facing lots.</p> <p>Greens may range in size from 500 ft² to 1 acre.</p>	<p>Improvements may include informal tree plantings and an irregular topography.</p> <p>Greens may be used to preserve specimen tree(s).</p> <p>Greens shall be bound by streets on a minimum of three sides or 75% of their perimeter, and may be bound by front facing lots on one side or 25% of their perimeter. No rear facing lots allowed adjacent to a green.</p>	
Neighborhood Park	<p>Neighborhood parks provide active and/or passive recreational use.</p> <p>Neighborhood parks may range in size from 1 to 5 acres, and may exceed 5 acres if it serves an entire neighborhood or group of neighborhoods, or incorporates large physical features.</p> <p>Neighborhood parks may be combined with parkways.</p>	<p>Improvements shall include benches and walking paths.</p> <p>Improvements may include, but are not limited to, tennis courts, racquetball courts, basketball courts, volleyball courts, ball fields, swings, slides, playgrounds, dog parks, restrooms, picnic units, shelters, and parking.</p> <p>Neighborhood parks may include assets to the community such as a lake, river frontage, high ground, or significant stands of trees and shall be bound by streets on a minimum of 50% of their perimeter. Front facing lots are encouraged around the perimeter.^{2,3}</p>	

Category	Description	Required Improvements	Illustration
<p style="text-align: center;">Clubhouse Pool Amenity Area</p>	<p>Clubhouses and pool amenity areas may be located in a neighborhood park, mini park, or alone as an amenity area for the residents of a developed community.</p>	<p>Improvements may include a swimming pool, group activity room, gazebos, outdoor eating areas, and exercise stations. Pools shall be at least 1000 ft². All pertinent building and health codes for swimming pools shall be met. ⁴</p>	 <p>The illustration shows a site plan for a clubhouse and pool amenity area. It features a central rectangular building with a brown roof, a blue rectangular pool, and several green circular trees scattered around the perimeter. The area is enclosed by a grey boundary, possibly a road or fence.</p>
<p style="text-align: center;">Parkway</p>	<p>Parkways provide passive recreational areas along natural or constructed features such as streams or roads and are used for transportation, recreation, and environmental protection. Parkway and greenways differ from neighborhood parks, plazas, and squares in that their detailing is natural (i.e., informally planted), except along rights-of-way, and may contain irregular topography.</p>	<p>Improvements shall include appropriately surfaced trails, benches, and trash receptacles. Parkway shall be designed to incorporate natural settings such as creeks and significant stands of trees within neighborhoods. Existing mature trees, landscaping, natural drainage ways, and creeks shall be preserved.</p>	 <p>The illustration shows a parkway layout with a central strip of green space containing many small green circular trees. This strip is flanked by yellow rectangular blocks representing buildings or lots, with narrow paths or roads connecting them.</p>

¹ Playgrounds must meet all federal, state, and local regulations and guidelines and be compliant with the Americans with Disabilities Act. See the National Playground Safety Institute for guidelines and additional resources for design.

² See National Recreation and Park Association's (NPRA) *Park, Recreation, Open Space and Greenway Guidelines* for recommended design/spatial standards.

³ See *Recommendations for Accessibility Guidelines: Recreational Facilities and Outdoor Developed Areas* for outdoor accessibility design guidelines.

⁴ Swimming pools must meet all applicable building and health codes for Cabarrus County and the State of North Carolina.

10.6 Complete Streets Initiative

10.6.1 Vision and Purpose

The City of Concord's Complete Streets Initiative was developed to guide City staff and developers through the process of designing and implementing streets that are safe and convenient to all users. The Complete Streets Initiative is the policy of the City Council. It is the goal of the City Council to provide for the needs of drivers, public transportation vehicles and patrons, bicyclists, and pedestrians of all ages and abilities in all planning, programming, design, construction, reconstruction, retrofit, operations, and maintenance activities and products.

All transportation improvements are opportunities to improve safety, access, and mobility for all travelers in Concord. Bicycle, pedestrian, and transit modes are integral elements of the transportation system. Any changes or improvements to streets should add value to the adjacent land and neighborhoods. Therefore, the City of Concord strongly encourages the design of all streets to:

- Accommodate people of all ages and physical abilities whether they walk, bicycle, use public transit, or drive;
- Integrate connectivity and traffic calming with pedestrian-oriented site and building design to create safe and inviting places;
- Strengthen and enhance neighborhoods without displacing current residents;
- Promote active and healthy lifestyles;
- Integrate environmental stewardship, water management, and energy conservation;
- Vary in character by neighborhood, density, and function.

The implementation of Complete Streets in the City of Concord should effectively help to:

- Encourage people to travel by walking, bicycling, and using public transit;
- Provide transportation options for people of all ages, physical abilities, and income levels;
- Enhance the safety and security of streets;
- Improve the health of people;
- Create livable neighborhoods;
- Reduce paved area, street water runoff into watersheds, greenhouse emissions and other air pollution, and energy consumption;
- Promote the economic well-being of businesses and residents;
- Increase civic space and encourage human interaction;
- Create places with engaging architecture, street furniture, landscaping, and public art that reflect the diversity and cultures of the neighborhood;
- Foster healthy commerce.

10.6.2 Scope

The Complete Streets Initiative applies to all roadway projects within the City of Concord, including those involving operations, maintenance, new construction, reconstruction, retrofits, rehabilitation, or changes in the allocation of pavement space on an existing roadway. This also includes privately built roads intended for public use.

The City of Concord will adhere to the Complete Streets Initiative and will encourage private developers to adhere to the Complete Streets Initiative for all street construction, except under one or more of the following conditions:

- A. A project involves only ordinary maintenance activities designed to keep transportation assets in serviceable condition, such as mowing, cleaning, sweeping, spot repair, resurfacing, concrete joint repair, or pothole filling, or when interim measures are implemented on temporary detour or haul routes;
- B. The City Engineer, Transportation Director, and Planning Director jointly recommend that the construction is not practically feasible or cost effective because of significant or adverse environmental impacts to waterways, flood plains,

remnants of native vegetation, wetlands, mountainsides, or other critical areas; or due to impacts on neighboring land uses, including from right of way acquisitions; or changes to the street may detract from the historical or cultural nature of the street or neighborhood.

Complete streets may be achieved through single projects or incrementally through a series of smaller improvements or maintenance activities over time.

The City of Concord will evaluate each project during the development review process to determine the extent to which the project has implemented Complete Streets elements.

10.6.3 Design Elements

A limited number of model Complete Streets cross-section examples can be found in Article II, Section 3.0 of the City's *Technical Standards Manual (TSM)*. Complete Streets design elements should be considered for incorporation on all new or modified streets. Flexibility exists to consider the unique circumstances of different streets where sound engineering and planning judgment will produce context-sensitive designs. As new and better practices evolve, these will be incorporated as well. Consideration of the context and elements must be brought into the decision-making process. At a minimum, the following design elements should be considered for all streets:

- Keep street pavement widths to the minimum necessary;
- Provide well-designed pedestrian accommodations in the form of sidewalks or shared-use;
- Provide frequent, convenient and safe street crossings. These may be at intersections designed to be pedestrian friendly, or at mid-block locations where needed and appropriate;
- Provide bicycle accommodations along streets, either by designated bike lanes or shared lanes;
- Where physical conditions warrant, provide landscaped buffers between pedestrian and vehicular traffic;
- Provide traffic-calming elements in accordance with the City of Concord's Traffic Calming Policy, found at:

www.concordnc.gov/Departments/Transportation/Policies-and-Regulations;

- Provide accommodations for public transit, such as bus pull-outs and transit stops integrated into the sidewalk system.

10.6.4 Jurisdiction

The City of Concord shall work with the North Carolina Department of Transportation (NCDOT) on state-controlled roads to apply this policy.

The City encourages all private developers to comply with this section and will facilitate the inclusion of Complete Streets during the review processes.

10.6.5 Connectivity

The Complete Streets Initiative shall be in accordance with the Street Connectivity Requirements in Section 10.2.6.

Additionally, opportunities to repurpose rights-of-way and add new rights-of-way to enhance connectivity for pedestrians, bicyclists, and transit should be sought after. Non-motorized connectivity improvements to services, schools, parks, civic uses, regional connections, and commercial have a high priority.

10.6.6 Context Sensitivity

- A. Streets should be in harmony with the adjacent land uses and neighborhoods and should be designed with public input.
- B. Streets should be designed in harmony with natural features such as waterways, slopes, and ravines.
- C. Architecture, landscaping, streetscaping, public art, signage, reflecting the community, neighborhoods, history, and natural settings are encouraged.

10.6.7 Resources

For further information on the implementation of Complete Streets, refer to the following websites:

- <http://www.completestreets.org/>
- <http://www.nccompletestreets.org/>

- Portions of language in this section were adopted and modified from the Los Angeles County 2011 Model Design Manual for Living Streets. For more information, refer to <http://modelstreetdesignmanual.com/index.html>