**CHAPTER 3. Transportation**

**Sec. 3.1 Transportation systems - General**

**3.1.1 Street design**

1. The provisions of this section shall apply to all street design and construction in the town. Where no specific roadway construction, design standard, or specification is set forth in this manual, the provisions of the Virginia Department of Transportation (VDOT) Road and Bridge Standards, Secondary Street Acceptance Requirements, Minimum Standards for Entrances to State Highways, Road Design Manual, American Association of State Highway Transportation Officials (AASHTO), American Disabilities Act Guidelines (ADAG), Manual on Uniform Traffic Control Devices (MUTCD). All streets shall accommodate a SU-30 vehicle loading.
2. The arrangement of major streets in a development shall provide for their proper continuations with development of adjoining properties. The proper interparcel connecting arrangement shall be accomplished by the use of stub streets and temporary cul-de-sacs, etc., which is intended to provide and maintain access for basic public services, to allow movement of vehicular, bicycle, and pedestrian traffic, and to provide a corridor for public utilities.
3. Interparcel connecting streets shall be designed in consideration of the anticipated future traffic from undeveloped adjacent tracts based on the land use classification of the Future Land Use Plan and the Comprehensive Plan.
4. The street network proposed by a development shall be designed to provide an orderly access progression from local streets, to collector streets, to arterial streets.
5. In every zoning district, projects shall be laid out so as to provide vehicular interparcel connections with surrounding properties, in a location and design consistent with the Technical Design Manual, provided that the Director of Public Works is satisfied that such connection will not promote cut through traffic inconsistent with the design and function of the roadway.
6. When interparcel connections are made, residential streets shall be laid out to discourage cut-through movements of vehicles, and to minimize or avoid four-way intersections. When cut-through design cannot be achieved, a modification may be requested.
7. Public streets shall be designed in accordance with the current edition of VDOT Appendix B – Road Design Manual – Subdivision Street Design Guide (right‐of‐way widths shall be a minimum width of 50’ with a minimum travel lane width of 12 feet), for all publicly dedicated streets.
8. Roads shall be configured to avoid floodplain unless no other alternative alignment is feasible, and to limit stream crossings.
9. Road jogs with center lines offsets of less than 225 feet shall not be allowed. A road jog is defined as a through traffic movement in an urban or high volume road situation which may make two changes of directions at successive intersections. Public street intersection spacing shall be in accordance with VDOT standards.

**3.1.2 Functional Classification of streets**

Functional classification is the process by which streets and highways are grouped together into systems according to the character of service they provide or are intended to provide. The following types of systems shall be utilized as guidelines to describe functional classifications within a street network and shall not be utilized for the design or cross section of specific streets. Street design shall be based on traffic generation, existing and projected future traffic, adequate levels of service, and the Comprehensive Plan.

A. Local Street: A local street represents the lowest category of the functional classification system. Its sole function is to provide direct access to individual abutting parcels. Its traffic is local in nature and extent, rather than regional. Generally, traffic volume should not exceed one thousand (1,000) vehicles per day (vpd).

1. Minor Collector Street: A minor collector street is designed primarily to serve the collection function for a group of local streets. Additionally, its purpose is to provide direct access to individual abutting parcels. It is designed to serve internal traffic movements within an area of the Town and connect with the arterial system. It is not meant to handle long through-trips. Generally, traffic volume should range from one thousand one (1,001) vehicles per day (vpd) to seven thousand (7 ,000) vehicles per day (vpd).
2. Major Collector Street: A major collector street has a primary function to provide neighborhood linkages and aggregate traffic, carrying it to the arterial system. It may also penetrate a neighborhood, distributing trips to ultimate destinations and, in rare instances, provide direct access to individual abutting parcels. Generally, traffic volume should range from seven thousand one (7,001) vehicles per day (vpd) to fifteen thousand (15,000) vehicles per day (vpd).
3. Arterial Street: An arterial street is designed to convey major movements of traffic within or through the town. It interconnects the principal traffic generators within the town and, in extremely rare instances, provides direct access to individual abutting parcels. These streets are Route 11 and Route 55 through town.

**3.1.3 Street dedication**

1. When a development abuts one side of a state-maintained street(s), the developer shall be responsible for any right-of-way dedication, grading, surfacing, and drainage along such street(s) as may be deemed necessary by the Director of Public Works or VDOT and, to the extent commensurate with the additional traffic generated, to provide a safe entrance into the development. The development shall address the dedication of sufficient right-of-way and the construction of a half-section improvement of the street(s) for its entire frontage, to conform to the design standard for that street(s) as shown in the Comprehensive Plan, centerline studies, engineering plans, and the appropriate standards of this manual. The area dedicated for future roadway improvements may be used, provided it is not for the purpose of satisfying the minimum requirements of this manual or Zoning Ordinance (i.e., parking storage, etc.). The placement of utilities within the dedicated area will be allowed when they are consistent with the ultimate roadway construction. If the dedicated area is used for any other purpose other than roadway construction, the developer shall escrow funds for the removal of any improvements not consistent with the planned roadway construction.
2. When a subdivision or other development site abuts one side of any public road in the State highway system, the subdivider shall be required to dedicate one‐half of the total right‐of‐way or easements necessary to make such road conform to VDOT and Town standards, including accommodations for pedestrians and bicycles. The subdivider may be required to dedicate more or less right‐of‐way or easement to make appropriate horizontal and vertical adjustments to such road.

**3.1.4 Street naming and addressing.**

1. Street naming and addressing shall be in accordance with Article IV is the subdivision ordinance.
2. Street names and addresses shall be drafted on the site plan and plat for review by the Zoning Administrator. The approved street names and address shall be indicated on the approved Site Plan, approved Subdivision Plan, and approved plat prior to recordation.
3. Plans for variable office, warehouse, and retail spaces shall specify the maximum number of units possible within the overall structure. The number shall be broken down by level for multistory structures.
4. The street type shall dictate both the street designation and amount of numerals used for addressing. All private streets shall be subject to these provisions.
5. Principle Arterial – multilane highway normally 4 lanes, controlled access, divided: shall provide addressing of 5 digits and have a suffix of Parkway, Boulevard, or Expressway.
6. Minor Arterial – multilane, controlled access, secondary traffic arteries carrying high traffic volume: shall provide addressing of 5 digits and have a suffix of Highway, Pike, or Road
7. Collector Street – 2 or 4 lanes providing access: shall provide addressing of 4 digits and have a suffix of Avenue, Street, or Drive.
8. Local Street providing access to individual lots within a subdivision or commercial area: shall provide addressing of 4 digits and have a suffix of Circle, Loop, Lane, or Trail.
9. Local Street having one way in and out such as a cul-de-sac: shall provide addressing of 3 digits and have a suffix of Court, Place, Terrace, or Turn.
10. Travelway usually behind dwellings not used for normal through travel: shall provide addressing of 3 digits and have a suffix of Alley or Mews.

**3.1.5 Street access**

A. A VDOT permit shall be required prior to any construction within the state-maintained right-of-way.

B. When the traffic generated from an entire development is projected to exceed two thousand five hundred (2,500) vehicles per day (vpd), the development shall access an existing state street or to a street constructed to state standards to be included in the state street system in two locations. In situations where two (2) access points in accordance with the above cannot be physically made (due to restrictions in topography or sight distance, or due to limitations in state street frontage), a single connection may be allowed where specifically approved by the Director of Public Works.

C. All single-family detached dwelling lots, unless otherwise specified in the Zoning Ordinance, shall have frontage on and access to existing state maintained public streets or streets approved and bonded to be constructed to a standard acceptable for addition to the state street system. The amount of frontage shall be established in accordance with the regulations for the zoning district, as provisioned in the Zoning Ordinance.

D. Commercial, institutional, and industrial lots may be approved for recording without public street frontage, provided that lots have an access easement which meets the approval of the Director of Public Works. To assure maintenance of the access easement, an association of owners must be established prior to the approval of any plats or plans. Improvements within the access easement must be sufficient to accommodate the type and volume of traffic anticipated and constructed to standards satisfactory to the Director of Public Works.

E. Single-family attached, multifamily, commercial, and industrial development shall have access to a state-maintained street. This access may be via private travelways, provided they meet the appropriate design standards in accordance with this manual. An association must be established for the ownership and perpetual maintenance of travelways in a development. Travelways serving residential development shall not carry greater than one thousand (1,000) vehicles per day (vpd).

F. Privately maintained travelways shall be platted such that all lot owners are assured perpetual right-of-access to a state-maintained street. When permitted by the Zoning Ordinance, single-family lots approved for suburban cluster standards may be platted with frontage and access consisting of a flag lot driveway. In such cases, the development shall conform to the requirements for flag lot driveways in this manual.

G. In commercial, institutional and industrial lots or developments, adequate interparcel travelways shall be required to provide perpetual interparcel access for the movement of vehicles and minimize frequent access onto roadways. An adequate easement shall be provided for interparcel access. The recorded plat shall note the perpetual interparcel access as "privately owned and privately maintained by the lot owner(s).”

H. Reserve strips (spite strips) controlling access to public roads shall be prohibited as in Code of Virginia, Agency, 30, Title 24, Chapter 92, (24VAC30-92-130 et seq.).

**3.1.6 Street intersections and use access**

1. The number of intersections of local and collector streets and use access with arterial streets shall be held to a minimum to avoid hazard, delay, and preserve their integrity, and shall be coordinated with the crossover locations planned or approved by the Director of Public Works and VDOT.
2. Whenever a proposed development contains or is adjacent to an arterial or major collector road, direct access shall be evaluated and the Director of Public Works and/or Zoning Administrator may require that provisions be made for the future elimination or reduction of direct access through methods such as the creation of a parallel road system, combined lot access, and other methodologies as determined appropriate.
3. Roads shall be laid out in such a manner as to intersect as nearly as possible at right angles (within 10 degrees of 90 degrees)
4. Landings shall be provided for public roadways and private roadways at intersections to ensure adequate grade and sight distance at intersections. The maximum grade along the landing for private roadways shall not exceed 3% or the cross slope of the intersecting road, whichever is greater. Breakover shall not exceed 6%. The minimum length of landing shall be 50 feet. Landings for public streets shall meet VDOT standards. Landing shall be defined as that section of a roadway which is adjacent to an intersection and utilized for vehicle stacking. Breakover is defined as the difference between the centerline grade of an intersection roadway and the cross slope of the intersecting roadway.

**3.1.7 Intersection sight distance standards**

All streets shall be designed meeting or exceeding the minimum intersection sight distances outlined in Exhibit 3.1.6 and Table 3.1.6. It is prohibited to place any obstacles that create a sight restriction within the sight triangles.

The Sight Location shall be located 4 feet from the centerline of the minor roadway, 14.5 feet from the edge of the closest travel lane of the major roadway.

The Left Sight Distance shall be located at the middle of the nearest lane, at this distance identified in Table 3.1.6 based on the Design Speed of the major roadway.

The Right Sight Distance shall be located at the middle of the nearest left-to-right movement lane, at this distance identified in Table 3.1.6, based on the speed of the major roadway.

Exhibit 3.1.6 Sight Distance Triangles



**3.1.8 Future interparcel connections**

A. All planned interparcel connections shall be constructed to the subdivision or site boundary limit with adjoining properties. If a temporary turnaround is required onsite, the right of way for the turnaround shall be dedicated and all setback requirements referred from the right-of-way line or the temporary turnaround easement, whichever is more restrictive. In the event that the interparcel connection is not constructed due to topographic or other physical constraints and/or a change in the needs of the community, the temporary tum around shall be converted to a permanent cul-de-sac acceptable to VDOT and the temporary easement converted to a permanent right-of-way.

B. The developer shall provide on-site temporary construction easements of sufficient width and the right-of-way dedication to accommodate the permanent turnaround in the event such planned interparcel connection will not be realized. The dedicated right-of-way area shall be vacated in the event the connection is made.

**3.1.9 Street curb and gutter**

A. Curb and gutter shall be provided within subdivisions requiring urban street sections. This excludes rural residential zoning districts requiring a minimum lot size of one (1) acre and greater.

B. The following shall provide curb and gutter and sidewalk/shared use paths if the adjoining properties meet the requirements for curb and gutter.

1. Any required improvements to existing state-maintained streets, necessitated by development,
2. Any new multifamily or commercial development adjacent to state-maintained streets.

C. On privately-maintained travelways, curb and gutter contiguous to a fire hydrant shall be painted yellow, fifteen (15) feet to each side of the fire hydrant. This clear access area shall be marked as fire lane.

**3.1.10 Sidewalks**

Sidewalks shall be placed within the public access easements. Handicap accessible ramps and provisions, in accordance with State and Federal requirements, shall be provided at roadway intersections with curb and gutter.

**3.1.11 Street lights**

1. All roadway luminaire installations shall conform to VDOT specifications.
2. Utility easements shall be provided on the utility plat along the frontage of all lots in a residential development. The developer will be responsible for granting utility easements and ensuring that all bonded roadway luminaires are installed.
3. Roadway luminaire poles must be either breakaway type or be located outside the right-of-way or the minimum required clear zone, whichever is greater. Roadway luminaries and arm brackets shall not overhang the travel way/through lane by more than one (1) foot. On sections with turn lanes, the luminaire and arm bracket may overhang the entire turn lane but shall not extend over the travel way/through lane by more than one (1) foot.
4. If overhang Intersection luminaires are used, the luminaires shall overhang the approach lanes of the street carrying the larger volume of traffic. The overhang shall be ninety (90) degrees from the edge of pavement.
5. In single-family detached and single-family attached residential developments,
	1. All luminaires shall be of full cut-off design and provided with shielding, reflectors or similar design to reduce lightshed onto the residential parcels.
	2. A minimum of two (2) luminaires shall be provided at all entrances to the development.
	3. A minimum of two (2) luminaires shall be provided at all street intersections where the minor street carries greater than four hundred (400) vehicles per day (vpd). One (1) luminaire shall be provided at all public and private cul-de-sacs, stub-outs, and dead ends, including temporary cul-de-sacs.
	4. Luminaires shall be placed in a manner that no more than three hundred (300) feet of roadway between luminaires, measured from centerline of the roadway. Luminaires may alternate sides of the roadway.
6. In multifamily developments, a minimum of two (2) luminaires shall be provided at all primary entrances to each section of the development accessing onto the main public roadway and all secondary entrances, which carry greater than four hundred (400) vehicles per day (vpd). One (1) luminaire shall be provided at all public and private cul-de-sacs, stub-outs, and dead ends, including temporary cul-de-sacs.
7. Two (2) roadway luminaires shall be provided at all entrances of commercial and industrial developments that carry greater than four hundred (400) vehicles per day (vpd). One (1) roadway luminaire shall be provided at all primary and secondary entrances of commercial and industrial developments that carry greater than two hundred (200) vehicles per day (vpd).
8. Bonding for the cost of installation of roadway luminaires is required.

**3.1.12 Street planting**

Street planting shall be in accordance with the Zoning Ordinance and Chapter 6 of this manual.

**3.1.13 Dead ends street, cul-de-sac, and turnarounds.**

1. A street which permanently ends with a cul‐de‐sac or turn‐around shall not exceed the lengths set forth below. Measurement of the length shall be taken along the centerline from the road's intersection with an existing or proposed through road to the center of the cul‐de‐sac or turn around.

|  |  |
| --- | --- |
| Development Type | Maximum Length in feet |
| Nonresidential | 1000 |
| Rural nonresidential | 3500 |
| Single-family detached | 1500 |
| Townhouse, Multi-family | 1000 |

1. Grades for cul‐de‐sac turnarounds shall not exceed 6 percent measured along face of curb or edge of pavement.
2. The geometry for a cul‐de‐sac or turn around shall have a radius of no less than 40 feet at the property line and no less than 30 feet at the face of curb or edge of pavement line. Other types of turnarounds may be considered for private roadways.
3. Developments with a single point of ingress/egress shall provide a secondary point of access for emergency vehicle use if the length of road, measured along the centerline from the point of beginning of the ingress/egress to the front of the most remote lot, exceeds the maximum allowable length as may be permitted by the Director of Public Works and/or Town Manager. such emergency vehicle access easement shall be an 20 foot wide easement, which shall contain a 16 foot wide graded and compacted travel‐way, centered in the easement. The grade or slope of the emergency vehicle access travel‐way shall not exceed 6 percent at any point along the centerline in the travelway. A typical section of the proposed emergency vehicle access easement and travel‐way shall be included in the land development submission.
4. Landscaped islands in cul-de-sacs is prohibited.

**3.1.14 Multi-modal design**

The transportation system proposed for subdivision or other development shall safely accommodate non‐motorized users. Design shall address both internal circulation as well as connections to existing and planned contiguous roads and bike and pedestrian facilities. In the absence of existing and

planned contiguous bike and pedestrian facilities on adjacent parcels, interparcel connections shall be coordinated with the Zoning Administrator.

**3.1.15 Traffic Calming**

The Town promotes the use of traffic calming measures to improve safety for non‐motorized street users and pedestrians in accordance with VDOT’s adopted policies and standards. During street layout and design, the issue of traffic calming should be considered. Early consideration can minimize future speeding problems and improve the livability of the neighborhood. If the street layout cannot be designed to encourage target speeds, traffic calming treatments may be appropriate. The type of treatment chosen for incorporation in the design depends on the function and traffic volume of the roadway segment. When traffic‐calming measures are proposed, such measures may be shown on the construction plans and profiles and/or site plan submissions. If desired, a comprehensive traffic calming design, designating proposed measures such as but not limited to signage, stripping, narrower roadways, chokers, and roundabouts, can be utilized. The use of raised crosswalks, speed bumps and speed humps is prohibited.

**3.1.16 Existing pavement**

1. Where plans call for matching existing pavement, the contractor shall provide cut joint and/or asphalt overlay in accordance with VDOT specifications.
2. The developer is responsible for any damage to existing roads and utilities which occur as a result of project construction.
3. Contractor shall be responsible for adjustments and/or reconstruction of all utility covers (manholes, frames and covers, valve boxes, covers, etc.) to match the finished grades of the affected areas of construction.

**3.1.17 Additional Private roadway and pipestem driveway design standards**

1. In addition to the regulations listed in 3.1.1 through 3.1.15, the following regulations shall apply to private roadways.
2. Private roadways shall be built to public standards as stated in subsection F. Plats and associated deeds dedicating a private right-of-way shall indicate the responsible party for maintenance of the right-of-way.
3. Private roadway traffic control signage and lane markings provided shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). When a signal is warranted, signalization shall meet VDOT standards.
4. Private roadways shall be designed to accommodate an SU‐30 design vehicle (AASHTO) and to
5. accommodate emergency. The travel way inside radius at an intersection shall be a minimum of 25 feet.
6. Roadway design details which are not standard designs used by VDOT, such as CG‐6R or YI‐1 components, shall be submitted as detailed drawings to the Director of Public Works for approval.
7. All private roadways and access easements identified in this chapter that serve 3 or more lots, require construction plans and profiles for the subdivision the roadways or access easements are to serve.
8. All private roadways must have a minimum stopping sight distance of 275 feet, with a minimum intersection sight distance of 350 feet.
9. The maximum grades of private roadways are 8%, with a minimum radius of 480 feet and a vertical curve design of 35 mph.
10. Pavement section minimum shall be 6-inch aggregate base course (VDOT 21B) and a 2 inch
11. bituminous surface course on a properly prepared and compacted subgrade in accordance with VDOT Road and Bridge Specifications.
12. Concrete sections shall comply with VDOT Specified mix’s and approved by the Town.
	* 1. **Pavement Thickness Design Standards**
13. The methods and materials used in the construction of all roads shall conform to the current VDOT Road and Bridge Specification, unless herein modified.
14. Pavement shall be design based on the current VDOT Pavement Design Guide for Subdivision and Secondary Roads in Virginia.
15. Required thicknesses of subbase, base course, and top or surface course for public roads shall be in accordance with current VDOT standards.
16. Preliminary subbase depth and pavement design shall be based on an assumed design CBR value of 6, if soil tests have not been performed. For private roadways with an Average Daily Traffic in excess of 400 VPD, soil tests of the as‐constructed subgrade shall be performed for the actual determination of CBR value. The required subbase thickness and pavement design may be modified prior to the placement of the subbase.
17. Pavement design assumes that the number of Heavy Commercial Vehicles (HCV), consisting of Trucks, Buses, etc., with 4 tires or greater, will not exceed 5 percent of the total projected traffic. If the total projected traffic includes more than 5 percent of such vehicles, an equivalent projected traffic shall be equal to (Average Daily Traffic (in VPD)) + (20 X Number of HCV over 5 percent).
18. Pavement in commercial areas shall be of a heavy-duty design in the major cartways and loading areas, and at dumpster pads to accommodate the anticipated vehicle loads. This design shall be subject to the approval of the Director. A minimum 6-inch depth 3000 psi (VDOT A‐3) concrete section with steel reinforcement over 4 inches of aggregate shall be used for loading areas and dumpster pad areas.
19. Alternative pavement design sections shall be encouraged. A request for approval of such designs shall be submitted with the site plan or construction plans and profiles and shall include the basis of design, calculations in accordance with current accepted engineering procedures and a justification for the exception to these standards. Technical information regarding the characteristics of the alternative materials of construction (e.g., brick or concrete pavers, pavement admixtures, pervious pavement, etc.) shall be provided as part of the request. The request may be submitted either as an integral part of the construction plans and profiles or site plans or separately for consideration.

**3.2 Driveways and alleyways**

**3.2.1 Driveway standards – general**

1. Driveways servicing Residential or Commercial properties must follow the Town of Strasburg Technical Design Manual, VDOT Road and Bridge Standard guidelines, unless modified in the manual.
2. Driveways shall be constructed and maintained with a paved surface.
3. Driveway access to single residential lots shall have a minimum length of 50 feet between curb returns and/or curb cuts.
4. The driveway shall maintain the full width of the garage doors to the property line or 18 feet outside of the garage, whichever is less.
5. Skewed driveways cannot exceed a 10:1 angle with the driveway apron or the garage.
6. No driveway slope shall be more than 10%. The slope shall be measured along the driveway centerline from the edge of the garage door/or back of slab to the property line and/or the driveway apron (whichever distance is less).
7. Curved driveways must be designed with a 12-foot minimum inside radius and a minimum 24 foot outside radius. See Exhibit 3.12.1.F below.
8. Tapered driveways cannot exceed a 10:1 angle of taper. When tapering greater than 10:1.
9. Residential driveways shall be a minimum depth of 24 feet from the edge of the garage door/or back of slab to the property line and/or the back of the sidewalk. The depth shall be measured along the driveway and/or garage door centerline.
10. Roll top curbing is not permitted as driveway entrances.

Exhibit 3.12.1.F

**3.2.2 Flag lot driveway standards**

1. For a proposed subdivision, when permitted by the Zoning Ordinance, the lots served by flag lot driveways shall be limited to twenty percent of all lots. The area in which the driveway is located must be included as a portion of the lot in which it serves.
2. For infill development, a flag lot driveway may be approved if the Zoning Administrator deems the following conditions apply. The driveway can be obtained as an off-site access easement.
	1. The lot is not sufficiently sized to be subdivide in accordance with the zoning district standards,
	2. The lot has a sufficient buildable area outside of the required setbacks,
	3. public road access or frontage is not viable,
	4. the required access easement is proposed.
3. The length of the flag driveway shall not exceed three hundred and fifty feet.
4. The driveway may serve up to two lots.
5. The driveway width for a single-lot access lot shall be 10 feet with a 14-foot-wide right-of-way.
6. The driveway width for a two-lot access shall be 18 feet with a 22-foot-wide right-of-way.
7. The required easement identified in subsection B serving one lot shall be a minimum of eighteen feet in width, and for a flag driveway serving two or more lots, the easement shall be forty feet in width.
8. The driveway shall be designed to provide a paved area to accommodate a turn-around.
9. Flag lot driveways shall comply with 3-1 of the Technical Design Manual.

**3.2.3 Alleyways**

1. Alleyways for proposed development is discouraged.
2. Existing alleyways that are platted as a public right-of-way may be utilized for access to a lot. Proposals for the development of an existing alleyway easement shall be evaluated on a case-by-case basis by the Zoning Administrator and the Director of Public Works.

**3.3 Sidewalks and shared use paths**

**3.3.1 Sidewalks and shared use paths – general**

1. Sidewalks or shared use paths shall be required along both sides of all proposed streets and where improvements to such streets are necessitated by development.
2. In general, and to the extent set forth in subsection A above, sidewalks or shared use paths shall be required within the street right-of-way of any development or subdivision with curb and gutter (urban section) streets. Sidewalks shall be provided as shown on the standard typical street section and as determined in the plan approval process. In some cases, pedestrian trails/shared use paths may be located outside the street right-of-way, in lieu of the standard sidewalk required and, in this case, shall be maintained by the developer and/or homeowners association.
3. Sidewalks or shared use paths shall interconnect with those of surrounding development to ensure safe and direct access to schools.
4. No occupancy permit shall be issued until all sidewalks and/or shared use paths in the general area of the units scheduled for occupancy have been constructed, inspected, and approved.
5. Substitution of sidewalks for trails/shared use paths or vice versa in cluster development shall only be approved in instances where safe and sufficient pedestrian circulation is provided between recreation facilities, passive open space areas, and other off-site amenities likely to be used by residents.
6. In multifamily and single-family attached development, sidewalk and shared use path systems shall be designed to be continuous and connect to a public street. Sidewalks shall be provided on both sides of the privately maintained travelways in accordance with this manual.

**3.3.2 Sidewalks and shared use paths maintenance**

1. Sidewalks and shared use paths eligible for VDOT acceptance and maintenance pursuant to the Subdivision Street Requirements Manual, shall be maintained by the town.
2. Sidewalks and shared use paths not eligible for VDOT acceptance and maintenance pursuant to the Subdivision Street Requirements Manual, a maintenance agreement, created by the developer, shall be executed among the Town, the developer, and the homeowners association prior to the final bond release. The homeowners association shall assumed maintenance responsibility for the sidewalks/shared use paths.

3.3.3 **Sidewalks and shared use paths general standards**

1. The sidewalk and/or path shall be placed in a public access easement that extends at least two (2) feet beyond the outside of the sidewalk or trail on both sides.
2. The sidewalk and/or trail shall meet the current standard of the American Disabilities Act Guidelines (ADAG).
3. It is encouraged to develop activity centers (playgrounds, tot lots, open spaces) within high density residential areas. The activity centers must and will be maintained for the lifetime of the development by the Homeowners Association (HOA) that will be required to be established prior to approval of the construction plans.

3.3.4 **Sidewalk design standards**

1. Sidewalks must meet all Federal and State Regulations.
2. Sidewalks shall be constructed on a subgrade compacted at optimum moisture, within ±20 percent of optimum. The density of the subgrade shall be 95 percent when compared to the theoretical maximum density as determined in accordance with the requirements of VTM‐1(standard proctor) or compacted subgrade in accordance with VDOT Road and Bridge Specifications.
3. Sidewalks shall be constructed of VDOT type A‐3 concrete to a minimum depth of four (4) inches.
4. The maximum cross slope allowed for sidewalks shall be ¼ inch per foot.
5. Sidewalks within right‐of‐way shall be constructed to VDOT standards.
6. The longitudinal slope shall be consistent with the adjacent roadway.
7. CG‐12 handicap ramps shall be provided at all roadway crossings. Design details for the CG‐12 handicap ramp shall be provided with the design plans.

3.3.4 **Shared use path design standards**

1. Trails shall be constructed of concrete or asphalt except as part of a natural preserved area.
2. Trails shall comply with design guidelines in the appendix of this manual.
3. Trails within a Town and/or VDOT right‐of‐way shall comply with VDOT standards.
4. Trails outside of a Town and/or VDOT right‐of‐way shall be designed and constructed to the current AASHTO and ADAG standards. The minimum width of trails shall be no less than six (6) feet wide.
5. Trails in Naturally preserved areas (recreational, nature, fitness) that are access to open space will be constructed to NUCS guidelines.
6. Trails shall follow the natural topography as nearly as possible.

**3.3.5 Bicycle facilities**

1. Bicycle accommodations circulation plans shall be depicted on the construction plan.
2. Bicycle accommodations shall conform to AASHTO and VDOT standards.
3. A maintenance schedule on maintaining bicycle accommodations shall be included.
4. Streets with on‐street bicycle facilities shall have signage that is in accordance with FHWA and VDOT.

**3.4 Transportation, off-street parking**

**3.4.1 General requirements for off-street parking**

A. The off-street parking and loading spaces required by the schedule in Section 3.8.3 are minimum standards. Additional parking and loading spaces may be required as part of the site plan review, special use permit and zoning map amendment processes. All uses shall provide off-street parking and loading spaces in a number sufficient to handle the normal demand of employees, customers, and deliveries. When separate parking tabulations are required for components of a use, the square footage used for a component use shall be deducted from the square footage of the total use for general parking tabulation requirements. For uses not specifically listed in, Table 3.8.3, the Zoning Administrator, with the concurrence of the zoning administrator, shall require a minimum number of parking and loading spaces, based on the most similar use that is listed. For any individual use, the Zoning Administrator may require additional off-street parking and loading spaces when the operation of that use shows a repeated need for more spaces, based upon the intensity of a particular use proposed, by reference to the general standards provided in these sections.

1. The off-street parking and loading spaces required by Section 3.4.2 shall be reserved for, and located upon the same property, as the use for which they are required, except as provided in sections 3.4.2 and 3.4.3 of this manual. No off-street parking shall extend into any public right-of-way or required buffer area. Parking and loading spaces required for all uses, except one-family and two-family residential uses, shall have direct access from an interior driveway, and shall not necessitate backing from the space into any public street.
2. Parking and loading spaces (based on the square footage of a building) shall be calculated on the net floor area. Spaces based on the number of employees shall be calculated on the maximum number of employees normally present at any one time. Spaces based on the capacity of a building shall be calculated on the occupancy load allowed by the VUSBC. Spaces based on the number of seats, when benches are used, shall be calculated on every eighteen (18) inches of bench space counting as one seat. When the calculations of parking and loading spaces result in a fraction of five-tenths (0.5) or greater, the next greatest whole number shall be used. Parking and loading spaces required for two (2) or more uses on the same property shall be the sum of each use, except when a parking credit allowance is approved, as set forth in Section 3.4.3 of this manual.
3. Up to fifty percent (50%) of the required off-street parking may be located on an adjacent or abutting property if allowed by the Zoning Ordinance. In addition, where pedestrian access in the off-street parking requires traversing a public or private street designated or presently carrying traffic volumes equal or greater than major collector or arterial roadways, a pedestrian underpass, overpass, or traffic signal shall be required. Wherever parking is permitted pursuant to this section, appropriate instruments noting the restricted use of the adjacent property for parking purposes shall be recorded among the land records.
4. For mixed use developments located within Planned Development districts, parking requirements shall be calculated by the applicant and submitted for evaluation at the time an application is submitted for a rezoning request. The applicant shall submit the methodology, assumptions, and data used in performing the calculations. Parking standards shall be established with a rezoning approval of the mixed-use development. The minimum number of required spaces set forth in Table 3.8.3 of this manual may be reduced in accordance with Section 3.4.3 Parking Credit Allowance.
5. All required access streets, aisles, travelways, and parking lots, except those used for single-family detached lots or areas used for vehicle storage in the M-1 zones, shall be constructed and maintained with a paved surface. In commercial developments, paved parking areas shall be required or demonstrated to be available for each tenant requesting an occupancy permit. Paved parking areas and structures shall be designed in accordance with this manual.
6. Visitor parking spaces should be dispersed evenly throughout the development in close proximity to the units they serve.
7. The Zoning Administrator may vary parking requirements in the historic district in order to protect historic resources.
8. Parking within the Downtown Overlay District (DPO) shall be in accordance with Part 801 of the Zoning Ordinance.

**3.4.2 Parking and Loading Spaces Required**

A. Off-street parking and loading spaces shall be provided for every use allowed by the Zoning Ordinance in accordance with the provisions of Table 3.8.3.

B. When ancillary uses are itemized in conjunction with a calculation for nonresidential uses, the square footage calculated for the ancillary use shall be deducted from the square footage of the overall use.

C. Bicycle racks, lockers, or docking stations for bike sharing programs shall be considered in the vicinity of all proposed commercial and public uses along arterial and collector corridors within the Town.

**3.4.3 Parking Credit Allowance**

The Zoning Administrator may authorize, upon request of a property owner, a parking credit allowance. Such requests shall be in writing, shall state the reasons for the request, and shall include studies, surveys, reports or other evidence to support the request. A parking credit allowance may be authorized as follows:

* 1. Up to thirty percent (30%) of the required parking spaces maybe waived when the use is located in a Planned District (PD) or an area of development that normal individual demand will not be generated. In considering this waiver request, weight shall be given to the availability of public transportation, the proximity of commercial or public parking garages or lots, and the expected overlap of commercial and employment activities in the area.
	2. Credit may be given for parking spaces required for one use when parking spaces required for another use on the same lot, or on an adjacent lot, approved under Section 3.4.1.D of this manual, can be used because of a difference in normal operating hours. This credit may be given for up to seventy-five percent (75%) of the required spaces when no overlap in normal operating hours occurs, and up to twenty-five percent (25%) of the required spaces when an overlap of less than four (4) hours per day occurs, provided a legally sufficient agreement is executed when different property owners are involved.

**3.4.4 Parking Reduction in the Parking Overlay District**

The Zoning Administrator may authorize, upon request of a property owner, a parking count exemption for properties within the Parking Overlay District. The owner shall demonstrate;

1. The proposed development is consistent with the surrounding uses and other active uses within the Parking Overlay District.
2. The site constraints for the proposed development prevent the number of spaces identified in Table 3.8.3 from being provided.
3. All options to obtaining the required number of spaces has been exhausted.

**3.4.5 Setbacks**

Parking and loading spaces, and travelways, except for one-family and two-family residential use, shall be set back as follows:

1. At least ten (10) feet from any street right-of-way.
2. At least ten (10) feet from all other property lines, except at least fifteen (15) feet from property lines where a nonresidential use abuts a residential district.
3. Interior driveways or travelways shall be subject to the setbacks in paragraphs A and B of this section, except where joint driveways or travelways are authorized by the Zoning Administrator. Entrances and exits off a public street shall be subject to the setbacks in Minimum Standards of Entrances to State Highways Manual of VDOT.
4. Motor vehicle service fuel sales facilities shall have a minimum setback distance from the pump islands to the ultimate right-of-way line in accordance with Table 3.4.5.
5. All setback areas required under this section shall be landscaped and/or screened in accordance with Chapter 6 of this manual.

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| TABLE 3.4.5 PUMP ISLAND SETBACK |
| Angle of pump island to ROW (degrees) | Setback |
| Parallel | 12\* |
| 1 – 45 | 20 |
| 46 - 90 | 30 |
| \*The setback shall be twenty-two (22) feet if the refueling area is provided on the side of the pump island closest to the right-of-way. |

**3.4.6 Layout and Design**

1. All parking and loading spaces (including required accessible parking), driveways, entrances and exits shall be designed and surfaced in accordance with this manual.
2. For single-family attached development with private driveways and parking areas owned by a homeowners association, required off-street parking, except parking required for boats, trailers, and similar vehicles, shall be provided on each lot or within one hundred fifty (150) feet of each dwelling unit measured over sidewalks or other paved surfaces. Parking spaces must be labeled (e.g., street address, lot number, etc.), either to designate the single-family attached dwelling unit they serve or to indicate that they are reserved for visitors.
3. For single-family attached and multifamily developments, required off-street parking spaces shall be demarcated by four (4) inch white lines painted on the pavement or the curb. Any other proposed color and size will require prior approval of the Director of Public Works. Full delineation by 4" wide lines painted on the pavement showing the full width or length of the parking stall or parking spaces shall be required on commercial, office and industrial developments. Where paved parking areas are not required, delineation of parking spaces shall be by the use of individual wheel stops or other acceptable means for each unpaved parking space.
4. Before occupancy of any single-family attached unit, the parking spaces assigned to the particular unit shall be demarcated or marked (labeled) on the curb.
5. In general, private travelways and parking areas owned by the homeowners association (HOA) which are not illuminated by the required street entrance lights shall be illuminated. The average illumination level required shall be 0.2 to 0.5 foot-candles (2.20 to 5.50 lux). High pressure sodium (HPS) luminaires with 3,800 initial lumens on mounting height not to exceed eighteen (18) feet are desirable. At a minimum, four (4) luminaires (two on each side) spaced at one hundred (100) feet maximum within the parking bays and/or travelways shall be provided. However, at the discretion of the engineer and the utility company, an equivalent type of fixture will be allowed with the approval of the Director of Public Works. The luminaires shall be directed downward. Areas opposite the single-family attached units or main entrances of multifamily buildings will require illumination on one (opposite of building or row of units) side only.
6. Outdoor lighting shall be provided in accordance with Section 84-500.09 and Part 313 of the Zoning Ordinance and Section 3.4.11 of this manual. All outdoor lighting fixtures shall be designed, shielded, aimed, located and maintained to shield adjacent properties and to prevent glare onto adjacent properties or roadways. Parking lot light fixtures and light fixtures on buildings shall be full cut-off fixtures.
7. The engineer or developer can provide different design, arrangement and/or types of luminaires if approved by the utility company. Such design will require the approval of the Director of Public Works prior to installation.
8. The cost of luminaires shall be bonded with the County during the site plan approval. The luminaires shall be installed prior to occupancy of any unit in which the luminaires service. Deviation from this requirement, due to utility company policies, will be reviewed and approved on a case-by-case basis by the Director of Public Works.
9. For commercial and office developments, required off-street parking spaces shall be demarcated by four (4) inch white lines painted on the pavement. Any other proposed color and size will require prior approval of the Director of Public Works.
10. Off-street parking areas shall have appropriate bumper guards where needed, as determined

by the Director of Public Works. Header curb may be substituted for bumper guards, provided

it is located at least ten (10) feet from any property line. This will avoid vehicle overhang into

adjacent properties.

1. When a nonresidential use abuts a residential use, the parking and loading spaces in the nonresidential use shall be set back fifteen (15) feet from the property line and the screening

requirements shall be met.

1. Off-street parking is to be provided with safe and convenient access to a street. Where spaces

and travelways are located contiguous to a street, they shall be set back at least ten (10) feet from the right-of-way. The side of the parking area and travelways adjacent to the street shall be curbed, allowing for ingress and egress through approved driveway locations. Design necessitating backing from a space into a street or entrance shall not be permitted.

1. Generally, parking areas shall be graded at a slope not to exceed five percent (5%); maximum slope shall not exceed ten percent (10%) with the exception of accessible spaces. However, design shall take into consideration accessibility requirements.
2. Travelways shall be a minimum width of twenty-two (22) feet. One-way travelways may be permitted by the Director of Public Works, due to site limitations. A one-way travelway may be a minimum of twelve (12) feet in width, provided there is no perpendicular parking along its length, it is clearly marked with signs and pavement markings and provided is not labeled as a fire lane. Angled parking may be provided in accordance with Table 3.8.1 of this manual.
3. The minimum dimensions of an off-street standard parking space shall be in accordance with Tables 3.8.1 and 3.8.2 of this manual. When the angle of parking is ninety (90) degrees to the aisle and wheel stops are provided, a two (2) foot overhang measured from the face of the wheel stop contacted by vehicle tires shall be allowed, provided it does not overlap with the required area of surrounding spaces, encroach on the required landscape setback, or restrict pedestrian access. For angle parking other than ninety (90) degrees, the minimum dimensions required shall be in accordance with Table 3.8.1.
4. The minimum dimension of a standard loading space shall be at least twelve (12) feet by forty-five (45) feet and shall have a minimum vertical clearance of at least fourteen (14) feet However, in a commercial, industrial project of more than one building, some of the required loading spaces could be reduced in length to thirty-five (3 5) feet as long as one standard loading space of twelve by forty-five (12 x 45) feet provided for each building.
5. Parking spaces designated for compact cars may be provided. Each space shall be clearly marked. Such spaces shall not constitute more than twenty percent (15%) of the entire parking space requirement and meet the minimum dimensions outlined in Table 3.8.1.
6. Parallel parking spaces shall have a minimum length of twenty-two (22) feet and a minimum width of nine (9) feet.

**3.4.7 Off-street Stacking Spaces**

1. For all uses with a drive-up window (banks, kiosks, etc., except restaurants) and for all uses involving customers waiting in line while in their vehicles (car washes, drive-in theaters, etc.), in addition to the parking space requirements of this section, off-street stacking spaces for at least six (6) motor vehicles shall be provided for the first window or unit, and thereafter five (5) off-street stacking spaces shall be provided for each additional window or unit. Where development uses require fewer than the required stacking spaces by a justifiable study, a waiver request may be considered on a case-by-case basis by the Director of Public Works.
2. For restaurants with drive-in, drive-up, or drive-through units or windows, eleven (11) on-site stacking spaces with at least six (6) queuing spaces from each order board shall be required. Five (5) stacking spaces shall be required between the order board and pick-up window.
3. For pharmacies with drive-up, or drive-through units or windows, four (4) stacking spaces shall be required for each window.
4. The minimum dimension for a stacking space shall be eighteen (18) feet by eleven (11) feet in its entirety. The stacking spaces shall not interfere with the travelways, parking, loading spaces, or island curbs.
5. The design of drive-through lanes for businesses that provide no more than one drive-through lane shall include provisions for an unencumbered lane that allows customers to by-pass stacked vehicles.

**3.4.8 Accessible Parking**

1. All components of accessible parking and building or sidewalk accessibility shall be provided in accordance with the current edition of the Virginia Uniform Statewide Building Code (VUSBC). And the ADAAG (Americans with Disabilities Act Accessibility Guidelines) standards.
2. Accessible parking spaces shall be identified by the above grade signs.
3. Accessible parking spaces shall be located as close as possible to a main building entrance ramp or walkway. However, the Director of Public Works may require some spaces at alternate locations to provide greater accessibility for the entire development. A combination of ramps, walkways, crosswalks or curb ramps shall be required in conjunction with those spaces.
4. Where curb exists between the parking lot and sidewalk, an inclined approach shall be provided to allow convenient access for wheelchairs. Built-up curb ramps shall be located so that they do not project into vehicular traffic lanes. This approach shall have a slope of not more than one (1) foot in twelve (12) feet and be three (3) feet wide, exclusive of flare sides.

**3.4.9 Design for Motor Vehicle Fuel Sales and Convenience Stores**

1. A. Off-street parking spaces shall be demarcated with paint and equipped with wheel stops where deemed necessary by the Director of Public Works.
2. Stacking spaces shall not interfere with the travelway traffic or the designated parking spaces. The width of a drive-through travel lane shall not be less than eleven (11) feet. A stacking space shall have a minimum length of eighteen (18) feet.
3. Each gasoline pump island shall be located so that there is a refueling area of at least ten (10) feet in width on both sides of the pump island. A minimum of twenty (20) feet is required between pump islands. Gasoline pump islands shall be protected at each comer by a vertically imbedded metal post filled with concrete at least thirty (30) inches in height above the ground and three (3) inches in diameter.
4. Travel lanes shall be a minimum of twenty-two (22) feet in width between any refueling area at the pumps and any parking spaces provided on-site.

**3.4.10 Parking Lot Landscaping**

Parking lots shall be landscaped in accordance with Chapter 6 of this manual.

**3.4.11 Parking Lot Lighting**

Where required by the Zoning Ordinance site plans shall include illumination plans conforming to the policy, details, illumination level standards and requirements of Part 84-313 of the Zoning Ordinance, VDOT I AASHTO Roadway Lighting Standards and street lighting standards of this manual. Photometric plans, illumination plans and details prepared by an illumination engineer shall be provided for review and approval.

3.5 **Maintenance of traffic plans**

A Maintenance of Traffic (MOT) Plan shall follow all the latest regulations of the Virginia Work Protection Manual, Uniform Traffic Control Devices, the Standard Highway Signs Book and VDOT Road and Bridge Standards. A MOT is required when road work will require more than two (2) days to complete. If work occurs on Route 11 and/or Route 55, the plan must be submitted to VDOT for approval and an approved copy submitted to the town. Town. The Public Works Department has the authority to stop all construction.

**3.7 Platting of private streets, travelways, and access easements**

1. Privately maintained streets and travelways shall be platted such that all lot owners are assured perpetual right of access to a state-maintained road.
2. The final recorded plat shall note ownership and maintenance responsibility of private streets, travelways, pipestem driveways, and common driveways.
3. The plat recorded for residential development served by private roads shall contain the following statement highlighted in a box: "The road serving this development is private and is not eligible for acceptance into the State Street system. Maintenance of the road, including snow removal, is not a public responsibility."
4. The final plat shall also note the following: "An adequate easement for ingress, egress, construction, maintenance of utilities for the Town and other emergency vehicles shall be provided where a common access easement is used." This shall also apply to travelways that provide access to multi-structure commercial, industrial, and residential development. The final plat shall note that the easement is privately owned and maintained by the owners or association.
5. Lots served by pipestem driveways shall be noted on the plat as follows: "Owners of lots that access through common driveways assume an obligation for maintenance of the common driveway, which obligation is a condition of their ownership of the property, and which runs with the land. Parking shall not be permitted within the minimum ingress/egress easement section required by Section 3.2.2."

3.8 **Transportation Tables and details**

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| TABLE 3.8.1 MINIMUM OFF-STREET PARKING AREA DIMENSIONS |
| Angle of Parking (degrees) | Width of Stall (feet) | Depth of Stall Perpendicular to Aisle (feet) | Width of Aisle (feet) | Width of Aisle Plus Two Stalls (feet) | Width of Stall Parallel to Aisle (feet) |
| Universal Car Space |
| 45 | 9.0 | 19.1 | \*15.5 | 53.7 | 12.7 |
| 60 | 9.0 | 20.0 | \*17.0 | 57.0 | 10.4 |
| 90 | 9.0 | 18.0 | \*\*22.0 | 58.0 | 9.0 |
| Compact Car Space |
| 90 | 8.0 | 16.0 | 22.0 | 54.0 | 8.0 |
| \*One-way\*\*Two-way (angled parking less than 90 degrees is not permitted within a two-way travelway) |

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| TABLE 3.8.2 PARALLEL PARKING AND AISLE DIMENSIONS |
| Direction of Traffic | Width of Stall (feet) | Depth of Stall (feet) | Width of Aisle (feet) |
| One-way Aisle(One-side parking) | 9.0 | 22.0 | 12.0 |
| One-way Aisle(Two-side parking) | 9.0 | 22.0 | 15.0 |
| Two-way Aisle(Two-side parking) | 9.0 | 22.0 | 22.0 |

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| TABLE 3.8.3 REQUIRED OFF-STREET PARKING SPACES |
| USE | LOADING | PARKING |
| RESIDENTIAL |  |  |
| **Apartments**1 bedroom2 or more bedrooms |  | 1.5/unit2.0/unit |
| **Single-family**AttachedDetached |  | 2.752 (excluding garage) |
| NONRESIDENTIAL – Net Floor Area = 75% of Groos Floor Area |
| **Amusement** | As deemed operational necessary at the time of site plan review | 1/200 net sf of building area1/20,000 net sf of land area open to the public |
| **Art Facility** | 1/75,000 net sf | 1/400 net sf |
| **Commercial Kennel** | 1  | 1/500 net sf; minimum 5 |
| **Day Care Facility**Adult – staff assistanceAdult – senior livingChild | 111 bus area turnaround  | 1 per 5 adults, then 1 per 10 based on licensed capacity1/200 net sf1/5 children up to 40, then 1/10 children based on license capacity |
| **Farmers Market** | 1/50,000 net sf | 1/400 net sf of sales area  |
| **Flea Market** | 1/50,000 net sf | 1/200 net sf of sales area  |
| **Fraternal Lodge/Civic Club** | 1 | 1/50 net sf |
| **Garden Center** | 1/50,000 net sf of interior area | 1/200 net sf of indoor sales, plus 1/2,000 net sf outdoor sales and storage |
| **Grocery** | 1/10,000 net sf, then 1/20,000 net sf | 1/200 net sf, 10 minimum |
| **Home Improvement/Hardware Store** | 1 plus 1/30,000 net sf including outside sales and storage | 1/200 net sf of indoor sales, plus 1/2,000 net sf outdoor sales and storage |
| **Hospital and Health Care**HospitalMedical office/clinicNursing or personal care facility | 1 plus 1/75,000 net sf1/75,000 net sf1/75,000 net sf | 1.25/bed1/150 net sf up to 15,000 net sf, then 1/2001/2 beds, by licensed capacity |
| **Hotels and motels** | 1 | 1.2/room |
| **Libraries** | 1 | 1/125 net sf |
| **Funeral home or wedding chapel** | 1 | 1/50 net sf, minimum 20 |
| **Motor vehicle, Heavy Equipment, and Recreation Vehicle uses** *Indoor display area and offices* *Outdoor sales area* *Service area (work bays and waiting area)* *Retail parts and accessories***Retail Fuel Sales** *Fuel only* *Fuel with service* *Fuel with convenience retail* | 2 up to 75,000, then 1/100,000 net sf111 | 1/400 net sf1/5,000 sf3/work bays1/300 net sf51/200 net sf of office/retail area plus 3 per work bay; 10 minimum5 plus 1/150 net sf; 10 minimum |
| **Office and Financial institutions** | None for building 20,000 net sf or less, 1 for each 20,000 net sf thereafter, up to 5 | 1/250 net sf, 10 minimum |
| **Recreational uses**Arcade, Billiard ParlorBowling Alley *Alleys* *Retail/Restaurant*Sports facilitySports FieldsSwimming Pool | NoneNoneNoneNoneNone1 | 1/150 net sf4/lane-alley1/400 net sf4/court plus 1 per 3 seats on stands30 per field1/150 sq ft of water surface |
| **Religious institution** | None | 1/3 seats |
| **Restaurants**FreestandingFreestanding drive-in or carryoutIn-line (attached) | 1/10,000 net sf, 2 maximum1/10,000 net sf, 2 maximumNone up to 10,000 net sf, 1 over 10,000 net sf | 1/100 net sf1/75 net sf, 5 minimum1/100 net sf |
| **Retail sales and services** | None up to 10,000 net sf, 1 for up to 30,000 net sf, plus 1 for up to 50,000 net sf, plus per every 100,000 net sf thereafter | 1/200 net sf up to 50,000 net sf, then 1/225 net sf |
| **School of special instruction** | None | 1/200 net sf |
| **Schools (public and private)**Learning CenterElementary though college | None | 1/seat1/20 classroom seats, plus 5 visitor spaces, plus 1 for every 4 seats in an auditorium or multipurpose room |
| **Self-storage** | None | 2/1,000 net sf of office, plus 1/employee |
| **Theater** | 1 | 1/3 seats, by rated capacity |
| **Veterinarian** *Small animals* *Farm animals* | 1 | 1/200 net sf1/400 net sf |
| INDUSTRIAL – Net Floor Area = 75% of Gross Floor Area |
| **General Manufacturing** | 1 plus 1/40,000 net sf | 1/1,000 net sf |
| **Heavy Industrial** | 1 plus 1/40,000 net sf | 1/1,000 net sf |
| **Medical or Dental Laboratory** | 1 plus 1/50,000 net sf | 1/300 net sf |
| **Research and Development** | 1 plus 1/50,000 net sf | 1/300 net sf |
| **Warehouse and wholesale** | 1 plus 1/40,000 net sf | 1/employee, plus 5 |