

## ORDINANCE NO. 30-2021

**AN ORDINANCE OF THE CITY OF TITUSVILLE, FLORIDA, AMENDING THE CODE OF ORDINANCES TO ADOPT LOW IMPACT DEVELOPMENT STANDARDS, AMENDING CHAPTER 30 "DEVELOPMENT STANDARDS" BY AMENDING SECTIONS 30-8 "TECHNICAL MANUALS", 30-163 "OPEN SPACE STANDARDS", 30-278 "SATELLITE PARKING", 30-324. "LANDSCAPE", AND 30-337 "PERMITTED USES WITHIN THE LANDSCAPE BUFFER YARD"; AMENDING CHAPTER 30 "DEVELOPMENT STANDARDS" BY CREATING ARTICLE V. "LOW IMPACT DEVELOPMENT" TO INCLUDE SECTIONS 30-421 "INTENT" AND 30-422 "LID ANALYSIS"; AMENDING CHAPTER 34 "PROCEDURES" BY AMENDING SECTION 34-306. "ADMINISTRATIVE WAIVER OF SETBACK REQUIREMENTS"; AMENDING THE "DEVELOPMENT REVIEW PROCEDURES MANUAL" BY AMENDING SECTION 3.4 "APPLICATIONS TO BE PROCESSED EXPEDITIOUSLY"; AMENDING THE "STORMWATER MANAGEMENT TECHNICAL MANUAL" SECTION 7.4 "STORMWATER MANAGEMENT DESIGN CRITERIA"; AMENDING THE "TRANSPORTATION INFRASTRUCTURE TECHNICAL MANUAL" BY AMENDING SECTIONS 9.7, 9.16.4, 9.16.8, 9.17.1.1, AND 9.19.3 TO ENABLE SPECIFIC LID INCENTIVES; CREATING "THE LOW IMPACT DEVELOPMENT TECHNICAL MANUAL" BY ADDING SECTIONS 11.1 "INTENT", 11.2 "GOALS OF LOW IMPACT DEVELOPMENT", 11.3 "LOW IMPACT DEVELOPMENT PLAN", 11.4 "OPERATIONS AND MAINTENANCE (O&M) DOCUMENTS", 11.5 "LOW IMPACT DEVELOPMENT (LID) BEST MANAGEMENT PRACTICE (BMP) LIST", 11.6 "LOW IMPACT DEVELOPMENT INCENTIVES MATRIX", AND 11.7 "MINIMUM PARKING REQUIREMENTS FOR DEVELOPMENT UTILIZING LOW IMPACT DEVELOPMENT"; PROVIDING FOR SEVERABILITY, REPEAL OF CONFLICTING ORDINANCES, AN EFFECTIVE DATE, AND INCORPORATION INTO THE CODE.**

**WHEREAS**, on August 25, 2020 the City Council of the City of Titusville, Florida approved advisability for staff to develop an ordinance encouraging Low Impact Development through incentives; and

**WHEREAS**, the City Council of the City of Titusville, Florida adopted Technical Manuals and Specifications to provide specific design details in support of the amended Land Development Regulations with the adoption of Resolution No. 35-2016, which were incorporated in the land development code with Ordinance No. 6-2021; and

**WHEREAS**, Policy 4.1.4 of the Coastal Management Element of the Comprehensive Plan states "Low Impact Development design standards shall provide for site design, engineering, and stormwater management designs and retrofits that reduce run-off, mitigate flood impacts, and provide for the on-site absorption, capture, and reuse of rain water. The standards shall encourage or require the increased use of 'green' stormwater management treatments, native/Florida-friendly landscape material, porous paving materials, and the preservation and restoration of natural drainage characteristics"; and

**WHEREAS**, Policy 1.11.2 of the Conservation Element of the Comprehensive Plan requires the City to "evaluate and, if appropriate, adopt Low Impact Development practices in the land development regulations to conserve natural resources"; and

**WHEREAS**, Low Impact Development strategies include design approaches for managing stormwater runoff and protecting water quality which reduces the ecological burden of development on the Indian River Lagoon and other local waterbodies; and

**WHEREAS**, the City Council of the City of Titusville, Florida desires to encourage the use of Low Impact Development Best Management Practices within the Land Development Regulations.

**NOW, THEREFORE, BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF TITUSVILLE, FLORIDA** as follows:

**Section 1.** That Chapter 30 "Development Standards", Article I "General Provisions", Division 4 "Technical Manuals", of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

### **Section 30-8. Technical Manuals**

The Technical Manual described below and provided in Attachment A is hereby incorporated into this chapter and adopted as part of these regulations as if fully set forth herein:

- (a) Development Review Procedures Manual
- (b) Environmental Protection Technical Manual
- (c) Hazardous Materials Technical Manual
- (d) Landscaping Technical Manual
- (e) Stormwater Management Technical Manual
- (f) Transportation Infrastructure Technical Manual
- (g) Concurrency Technical Manual
- (h) Low Impact Development Technical Manual

**Section 2.** That Chapter 30 "Development Standards", Article III "Improvements", Division 3 "Open Space", Section 30-163(a). – "Open space standards" of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

### **Sec. 30-163. Open space standards.**

- (a) *Required minimum open space.* The area of all eligible Low Impact Development (LID) best management practices (BMPs) listed in Low Impact Development Technical Manual Sec. 11.6 "Low Impact Development Incentives Matrix" shall be credited towards minimum required open space.

Table 30-2 Required Minimum Open Space

|   | Minimum Percent Required Common Open Space  | Additional Standards |
|---|---|----------------------|
| Residential Manufactured Housing Subdivision (RMH-1)    | 15  |                      |
| Residential Manufactured Housing Park (RMH-2)           | 15  | Sec. 30-163(b)       |
| Travel Trailer Park in the RMH-2 and T zoning districts | Per Chapter 28 Zoning, Article IV Use Table |                      |
| Planned Office Park                                     | 30  | Sec. 30-163(c)       |
| Highway Industrial Infill (M-3)                         |   | Sec. 30-163(d)       |

|  |    |                |
|--|----|----------------|
| Planned Industrial Development (PID)             | 20 | Sec. 30-163(e) |
| Planned Development (PD)                         | 35 | Sec. 30-163(f) |
| Regional Mixed-Use (RMU)                         | 20 | Sec. 30-163(g) |
| Urban Village (UV)                               | 25 | Sec. 30-163(h) |
| Cluster Development and Conservation Subdivision | 50 | Sec. 30-163(i) |

**Section 3.** That Chapter 30 “Development Standards”, Article III, “Improvements”, Division 9 “Parking/Loading/Storage”, Section 30-278(a) “Satellite parking” of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

**Sec. 30-278. Satellite parking.**

(a) If the number of off-street parking spaces required by this chapter cannot reasonably be provided on the same lot where the principal use associated with these parking spaces is located, or if a project utilizes the Low Impact Development best management practices (BMPs) listed in the Low Impact Development Technical Manual, Sec. 11.6 “Low Impact Development Incentives Matrix”, then spaces may be provided on adjacent or nearby lots in accordance with the provisions of this section. These off-site spaces are referred to in this section as satellite parking spaces.

**Section 4.** That Chapter 30 “Development Standards”, Article III “Improvements”, Division 10 “Landscaping”, Subdivision 2 “Landscape Materials”, Section 30-324(f) “Landscape” of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

**Sec. 30-324. Landscape.**

(f) Required landscaping may be credited as established in the landscape credits table below.

| Table 30-7: Landscape Credits   |                             |  |
|---|-----------------------------|--|
| Plant Material  | Minimum size                | Equivalency  |
| Preserved tree  | Minimum 4-inch caliper      | Equals 200 square feet of approved mixed vegetation                      |
| Newly installed tree  | Minimum 2½—3-inch caliper   | Equals 200 square feet of approved mixed vegetation                      |
| Existing or newly installed shrub   | Minimum 18 inches in height | Equals nine (9) square feet of approved mixed vegetation                 |
| Low Impact Development (LID) Best Management Practice (BMP) area (Sec 11.6) | None                        | 100% of the LID BMP area shall be credited as approved mixed vegetation. |

Note(s)—Irregular shaped lots — It is the intent that by following the above-outlined performance standards, each newly planted tree (palms not included) will have an average

two hundred (200) square foot rooting area. If a conflict occurs between newly planted trees, trees preserved, and the number of trees required because of lot size, the Administrator may make the determination to ensure the required rooting area of two hundred (200) square feet for each tree.

**Section 5.** That Chapter 30 "Development Standards", Article III "Improvements", Division 10 "Landscaping", Subdivision 3 "Landscape Yard (Buffer/Screen)", Section 30-337(b) "Permitted uses within the landscape buffer yard" of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

**Sec. 30-337. Permitted uses within the landscape buffer yard.**

- (b) Landscape yards shall not be included as drainage, right-of-way, utility or other easements unless the Low Impact Development (LID) best management practices (BMPs) listed in the Low Impact Development Technical Manual, Sec. 11.6 "Low Impact Development Incentives Matrix" are utilized or such uses are otherwise approved by the administrator, providing that the original intent and purpose of this section is met and there are unusual circumstances provided to the administrator.

**Section 6.** That the Code of Ordinances, City of Titusville is hereby amended by adding a section, to be numbered Chapter 30, "Development Standards", Article V. "Low Impact Development", Section 30-421 "Intent" and Section 30-422 "LID analysis", which sections read as follows:

**ARTICLE V. – LOW IMPACT DEVELOPMENT**

**Sec. 30-421. – Intent.**

The City encourages the use of Low Impact Development (LID) best management practices (BMPs) in the design of sites and subdivisions. The term LID refers to systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat. LID is an approach to land development or redevelopment that works with nature to manage stormwater as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treats stormwater as a resource rather than a waste product. Construction, design standards and specifications for bioretention facilities, rain gardens, vegetated rooftops, rain barrels, permeable pavement, and similar LID practices are adopted by reference in Section 11. - Low Impact Development Technical Manual.

**Sec. 30-422. – LID Analysis.**

Applications for subdivision plat or site plan approval shall provide an analysis of the potential to use LID design practices to meet the stormwater management design criteria and performance standards of the Stormwater Management Technical Manual. At a minimum such analysis will include consideration of site hydrology, topography, soils, and vegetation as described in Sections 11.5.1-11.5.4 of the Low Impact Development Technical Manual.

**Section 7.** That Chapter 34 "Procedures", Article V "Variances and Appeals", Division 7 "Administrative Waivers to Setbacks", Section 34-306 (a) "Administrative waiver of setback requirements" of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

**Sec. 34-306. Administrative waiver of setback requirements.**

- (a) In all zoning classifications, front, rear, side and side corner setbacks may be partially waived by the Administrator if the request meets the following criteria:
  - (1) The waiver shall only apply to setbacks imposed by the applicable zoning classification and Chapter 28, Article VIII pertaining to accessory use development standards.
  - (2) The waiver shall not exceed ten (10) percent of the required minimum setback(s) or one (1) foot, whichever is less. If the waiver request is related to the use of Low Impact Development BMPs listed in the Low Impact Development Technical Manual Sec. 11.6 "Low Impact Development Incentives Matrix" the waiver shall not exceed twenty (20) percent of the required minimum setback(s).
  - (3) The waiver shall be utilized only where the lot is a conforming lot or a legal nonconforming lot of record.
  - (4) The waiver shall apply only to the principal structure or an accessory structure.
  - (5) The waiver shall not result in an encroachment into an easement.
  - (6) Total structural coverage of the lot shall not exceed the floor area ratio required by the applicable zoning classification or the performance standards set forth in Chapter 30 for the area of critical concern.
  - (7) The waiver shall not result in encroachment to a wetland.

**Section 8.** That the Development Review Procedures Manual, Chapter 3 "Applicability", Section 3.4 "Applications to be processed expeditiously" of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

**3.4. Applications to be processed expeditiously.**

3.4.1. Recognizing that inordinate delays in acting upon applications may impose unnecessary costs on the applicant, the city shall make every reasonable effort to process permit applications as expeditiously as possible, consistent with the need to ensure that all development conforms to the requirement of these regulations. Applications for projects which include Low Impact Development BMPs listed in the Low Impact Development Technical Manual Sec. 11.6 "Low Impact Development Incentives Matrix" shall be eligible for an expedited review process.

3.4.2. If the application is for an activity requiring approval by the City Council and/or other Official Board or Commission and the requirements of these regulations have been met, the Administrator shall place the application on the agenda of the appropriate board. The administrator shall recommend denial to the appropriate board if the administrator deems an application is incomplete.

**Section 9.** That the Stormwater Management Technical Manual, Section 7.4 "Stormwater Management Design Criteria" of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

**7.4. - STORMWATER MANAGEMENT DESIGN CRITERIA.**

7.4.1. Stormwater management systems shall be designed in accordance with St Johns River Water Management District's (SJRWMD) Environmental Resource Permit Rules as regulated under Part IV of Chapter 373, Florida Statute, along with the following:

7.4.1.1. All stormwater systems shall be designed with a discharge to a Legal Positive Outfall, as defined in Chapter 37 Definitions of the Land Development Regulations. An alternative to the provision is the runoff of the developed or redeveloped site shall not alter the existing drainage patterns or exceed the rate of flow, timing, volume produced by conditions existing before development or redevelopment, for the 100-year/24-hour storm event.

7.4.2. The post development runoff for the development or redevelopment site shall not exceed the rate of flow, timing, or volume produced by conditions existing before development for the within the first 24-hour period for all storm events.

7.4.3. For existing sites of one-half (½) acre or less, as of the effective date of Ordinance No. 21-2005 (May 10, 2005), the site shall provide a minimum dry retention treatment volume of one (1) inch over the entire site. In addition, the cumulative impact of the stormwater runoff on the downstream flow shall be considered by the design engineer.

7.4.4. For redevelopment projects, the project will store on site as a minimum the treatment volume of runoff from the first inch of rainfall from all impervious surfaces.

7.4.5. All retention facilities shall be designed as "dry bottom basins," unless the site is outside of the Area of Critical Concern and incorporates the use of Low Impact Development best management practices (BMPs) listed in the Low Impact Development Technical Manual Sec. 11.6 "Low Impact Development Incentives Matrix." The bottom elevation shall be one (1) foot above seasonal high groundwater table.

7.4.5.1. A soils report, which includes the determination of the seasonal high ground water table elevation signed and sealed by a Florida Registered Professional Engineer or Professional Geologist.

7.4.5.2. Demonstration, by the applicant, that a dry retention system will not function based on actual seasonal high groundwater elevations and permeability rates, and subject to approval by the Administrator; or

7.4.5.3. Treatment train. Sites outside of the Area of Critical Concern may utilize wet ponds in the design of retention facilities, especially when the use of treatment trains are needed to meet the nutrient removal criteria of SJRWMD. If the designer utilizes wet detention in the treatment train then the designer must demonstrate that the size of the wet detention area is not greater than 150% of the minimum volume needed to meet the nutrient removal criteria.

7.4.5.4. Any approved wet detention ponds are to meet SJRWMD criteria (as of 2005) as per rule 40C-42.026 paragraph (4), except the orifice elevation shall be no more than one (1) foot below the seasonal high ground water table elevation or lower than the normal ground water table elevation.

7.4.6. The following criteria must be included in the design.

7.4.6.1. The exterior edge of the wall must have a minimum of a two (2) foot level perimeter (10:1 maximum slope).

7.4.6.2. The interior of the wall must have a minimum of a three (3) foot of level perimeter (10:1 maximum slope) to allow a safe standing area inside the wall area. The wall section must be fenced to prevent direct access.

7.4.6.3. The fence should be of a type that will not allow human passage between rails, post or the ground.

7.4.6.4. For stormwater management ponds that have greater than ninety (90) percent of the perimeter walled a locked access gate must be provided.

7.4.6.5. If the wall is greater than two (2) feet in depth then a built-in ladder must be provided at the access gate.

7.4.7. Post development runoff shall be treated to remove oil and sediment before it enters receiving waters by skimmers or other approved methods.

7.4.8. The construction of new open ditches below the seasonal high water table shall be prohibited. Underground piping of storm runoff is required when inverters are lower than the seasonal high water table.

7.4.9. Development, including grading and contouring, shall take place in a manner that protects the roots and stability of trees. Finished grades must match the existing grades no closer than two (2) feet from the property line. A retaining wall may be substituted for the above requirement when such installation is necessary to protect adjacent property (See Chapter 30, Article II Environmental, Division 2 Trees and Vegetation - Preservation and Mitigation).

7.4.10. Perforated pipe or exfiltration systems shall be prohibited as a primary means of retention. This provision does not prohibit under drain systems when such are deemed necessary by the Administrator.

7.4.11. The following software is acceptable to the City for demonstrating that the design meets the stormwater management criteria: ICPR, PONDS and MODRET. Other software may be used with prior approval from the City.

7.4.12. The following criteria should be used in the model and stormwater design. These parameters are specific to the City and the approval process. Any deviation to the parameters listed below must be approved by the City prior to their use.

7.4.12.1. Table 7.4.13.1 Model and Stormwater Design Criteria

**TABLE 7.4.13.1**

| Criteria   | Value                               |
|--|-------------------------------------|
| Freeboard - Pond Minimum                           | 0.5 feet for 25yr 24hr storm event  |
| Freeboard - Pond Minimum (Sec. 11.6 LID incentive) | 0.25 feet for 25yr 24hr storm event |
| Manning's Coefficient n                            | Table 4 FHWA-NHI-01-020             |
| Peaking Factor - Developed Land                    | 484                                 |

|                                    |                  |
|------------------------------------|------------------|
| Peaking Factor - Vacant Land       | 256              |
| Rainfall Distribution File         | SCSiii for Flmod |
| Safety Factor - Pond Recovery      | 2                |
| Time of Concentration - Minimum    | 10 minute        |
| Storm Events                       |                  |
| Mean Annual 24 Hour Rainfall Event | 5.0 inches       |
| 10 Year 24 Hour Rainfall Event     | 7.5 inches       |
| 25 Year 24 Hour Rainfall Event     | 9.5 inches       |
| 100 year 24 hour Rainfall Event    | 13.0 inches      |
| Wet Pond Design                    |                  |
| Resident Time                      | 21 days          |
| Wet Season                         | 153 days         |
| Wet Season Rainfall                | 36 inches        |
| All other Criteria                 | SJRWMD           |

**Section 10.** That Chapter 9 "Transportation Infrastructure Technical Manual", Section 9.7 "Curbing" of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

**9.7. - CURBING.**

Curbing is required. The Administrator may grant a waiver to this requirement for projects that design landscape islands, medians, or vegetated swales along private rights-of-way or internal to a site's design for the collection of stormwater. The Development Review Committee (DRC) may grant a waiver to this requirement for projects that design landscape islands, medians, or vegetated swales along public rights-of-way for the collection of stormwater. Curbing shall meet the standards in the FDOT "Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways" (Commonly known as the "Florida Greenbook"), and/or Florida Standard Details (Index 300) for curbed standard details for all public and private streets. Table 9.7 establishes the options for preferred curb treatments. Any other proposed

curbing is subject to City Engineer's review and approval.

| <b>Table 9.7 - Preferred Curb Treatments</b> |  |
|--|--|
| Street Type                                  | Preferred Treatment  |
| New Local Streets<br>(Public or Private)     | Miami Curb (FDOT Index 300 Drop Curb)                        |
| New Collector or Arterial                    | Type F (FDOT Index 300)                                      |
| Existing Street                              | Match Existing Curb Profile as approved by the Administrator |
| Industrial Subdivision<br>(Local Roads)      | Ribbon Curb/Flush Curb (6" wide by 18" depth)                |

**Section 11.** That Chapter 9 "Transportation Infrastructure Technical Manual", Section 9.16 "Number of Required Parking Spaces" of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

**9.16. - NUMBER OF REQUIRED PARKING SPACES.**

Development in the City shall adhere to the following parking standards of these sections 9.16. Development in the Downtown Mixed Use (DMU) zoning district shall follow the parking standards of section 9.21.

9.16.1. All developments shall provide a minimum of two (2) spaces or an amount equal to five (5) percent of the vehicular spaces for bicycles.

9.16.2. Motorcycle spaces may comprise up to fifty (50) percent of the required bicycle spaces. Said motorcycle spaces may be counted toward the required vehicular spaces.

9.16.3. Buildings/developments with mixed uses shall be calculated as the sum of their component uses, per Table 9.16.4 of minimum parking requirements.

9.16.4. Table 9.16.4 establishes the minimum parking requirements for development within the City. Alternatively, projects utilizing Low Impact Development (LID) best management practices "BMPs" per the Low Impact Development Technical Manual Sec. 11.6 "Low Impact Development Incentives Matrix" may use the minimum parking requirements in the Low Impact Development Technical Manual Sec. 11.7 "Minimum Parking Requirements for

Development Utilizing Low Impact Development".

**Table 9.16.4 - Minimum Parking Requirements**

| Use  | Spaces Required | Min Per Unit   | Max Per Unit        |
|--|-----------------|--|---------------------|
| ACLF's, Convalescent Homes, Nursing Homes, and Rest Homes  | 1<br>1          | Every 2 patient beds, and Each Employee on largest shift                                   | 125% of the minimum |
| Arcade Amusement Centers/Electronic Gaming Establishment<br>If located in shopping center or shared parking area | 1               | For each 2 games or machines<br>Maximum allowed 10% of total spaces in shared parking area |                     |
| Assembly Areas, Auditoriums  | 1               | 150 s.f. of GFA  |                     |
| Boating<br>Wet Slip<br>Dry Dock/Storage  | 1<br>1          | Every 2 slips<br>Every 3 storage spaces  |                     |
| Churches, temples, places of worship   | 1               | 150 s.f. of GFA  |                     |
| Country Clubs, Golf Courses  | 3               | hole   |                     |
| Funeral Homes  | 1               | 150 s.f. of GFA  |                     |
| Hospitals  | 1               | Each patient bed   |                     |
| Hotels and Motels<br>Rental Unit and Accessory Uses  | 1<br>75%        | Each rental unit, and<br>Each accessory require parking                                    |                     |
| Manufacturing/Industrial<br>First 10,000 s.f. of GFA<br>Each additional 10,000 s.f. of GFA                       | 1<br>1          | 500 s.f. of GFA<br>10,000 s.f. of GFA  |                     |
| Medical/Dental Clinics and Offices   | 1               | 200 s.f. of GFA  | 125% of the minimum |
| Multi-Family (R-2, R-3) and RMH (1&2) Developments.<br>*See additional standards below.                          | 2               | Unit   |                     |
| *R-2 - Townhouses  | 2               | With direct access to a public street  |                     |

|  |        |  |                           |
|--|--------|--|---------------------------|
| *R-3 - Townhouses  | 2      | Two spaces on the same lot as the dwelling unit or one (1) on site space and one (1) remote guest parking space within three (300) hundred feet of the unit.   |                           |
| *Duplex, triplex, quadraplex and other multifamily units | 2      | (1) Separate parking—two (2) spaces with direct access to a public street.<br>(2) Common parking—two (2) spaces per dwelling unit plus one-half (0.5) guest parking spaces per dwelling unit.  |                           |
| *RMH-2   | 2      | Off-street parking shall be provided at a rate of two (2) spaces per unit, one of which shall be on a site of the manufactured housing unit plus one (1) additional parking space for each four (4) units for common parking that shall be evenly distributed throughout the park. |                           |
| Museums  | 1      | 300 s.f. of GFA  |                           |
| Parks  | 1      | 10,000 s.f. of land  |                           |
| Personal Services  | 1      | 300 s.f. of GFA  |                           |
| Private Child Care Center                                | 1      | 300 s.f. of GFA  |                           |
| Private Clubs, Fraternities, Lodges                      | 1      | 75 s.f. of GFA   |                           |
| Professional Offices                                     | 1      | 300 s.f. of GFA  |                           |
| Public Use and Community Services                        | 1      | 200 s.f. of GFA  |                           |
| Restaurants (eating places)                              | 1      | 150 s.f. of GFA  |                           |
| Retail Sales and Services                                | 1      | 250 s.f. of GFA  |                           |
| Schools - Preschools                                     | 1      | 300 s.f. of GFA  |                           |
| Schools - Elementary and Junior/Middle                   | 2<br>1 | Each classroom, and<br>300 s.f. of office GFA  |                           |
| Schools - High Schools                                   | 5<br>1 | Each classroom, and<br>300 s.f. of office GFA  | 125% of<br>the<br>minimum |
| Single Family Detached Dwelling                          | 2      | Each dwelling  |                           |

|  |        |   |  |
|--|--------|---|--|
| RE, RR, R-1A, R-1B and R-1C                                  |        |   |  |
| Theaters   | 1      | 150 s.f. of GFA                         |  |
| Warehouse<br>First 5,000 s.f.<br>Each additional 10,000 s.f. | 1<br>1 | 1,000 s.f. of GFA<br>10,000 s.f. of GFA |  |
| GFA = Gross Floor Area<br>s.f. = square foot                 |        |   |  |

9.16.5. For any use not listed above, the number of parking spaces may be determined by a parking analysis using ITE parking generation rates, other data and the Urban Land Institute. The Administrator must approve all parking studies prior to acceptance.

9.16.6. Change of Use. At the time of the erection of any building or structure or at the time other property undergoes a change in use, increased in intensity (which includes, but not limited to the addition of dwelling units, guest rooms, square footage, floor area, seats) then the minimum off-street automobile parking spaces with adequate provisions for ingress and egress by automobiles of standard size shall be provided in accordance with following requirements found in section 9.16 Number of Required Parking Spaces of this technical manual. These requirements should be considered the minimum requirements.

9.16.7. All areas used for sales display of any types of motor vehicles, boats, trailers or heavy construction equipment shall be paved. The paved display area requirement may be waived for uses located in the Area of Critical Concern.

9.16.8. In the areas and zoning districts specified in Chapter 30, Article III, Division 9, Section 30-283 "On-street parking credit," the DRC on a case by case basis may approve on-street parking spaces on the right-of-way between the two side lot lines of the site to be counted to satisfy the minimum off-street parking requirements. The DRC may consider evidence of site constraints and the availability of satellite parking in determining the appropriateness of adjacent on-street parking to satisfy minimum off-street parking requirements. The on-street parking space shall be for public use and shall not be reserved for private use. All proposed on-street parking improvements must be shown on the proposed site plan and approved during the permitting process. Projects proposing to utilize on-street parking as a LID BMP per the Low Impact Development Technical Manual Sec. 11.5 "Low Impact Development (LID) Best Management Practices (BMP) List" are encouraged to incorporate additional LID BMPs for DRC consideration.

**Section 12.** That Chapter 9 "Transportation Infrastructure Technical Manual", Section 9.17.1 "Parking Design Standards", "Parking Stall Dimensions" of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

9.17.1.1. Parking spaces shall meet the standards established in table 9.17.1.1 below. Handicap and Van Accessible parking spaces shall meet all ADA parking space requirements.

**Table 9.17.1.1 - Parking Space Dimensions**

| Parking Space Description                         | Width (feet) | Length (feet) |
|---|--------------|---------------|
| Regular Space                                     | 10           | 20            |
| Regular Space abutting a minimum Landscape buffer | 10           | 18            |
| Regular Space (LID)                               | 9            | 18            |
| Parallel Space                                    | 10           | 22            |
| Motorcycle Space                                  | 5            | 10            |

**Section 13.** That the “Transportation Infrastructure Technical Manual”, Section 9.19.3 “Parking Lot Curbing and Tire Stops” of the Code of Ordinances, City of Titusville is hereby amended to read as follows:

**9.19. - PARKING LOT CURBING AND TIRE STOPS.**

9.19.1. All interior landscaped areas and vehicular access areas shall be curbed with Type D curb (FDOT Index 300) to prevent vehicular encroachment.

9.19.2. Ribbon Curb/Flush Curb (6" in width by 18" in depth) with tire stops may be used in lieu of Type D curb to facilitate drainage in front of each parking stall. The sides of a parking stall must continue the use of Type D curb to prevent encroachment on landscape islands. See also section 9.2.8.

9.19.3. Curbing shall be installed around required islands in pavement. The Administrator may grant a waiver to this requirement for projects that design landscape islands, medians, or vegetated swales along private rights-of-way or internal to a site's design for the collection of stormwater. The Development Review Committee (DRC) may grant a waiver to this requirement for projects that design landscape islands, medians, or vegetated swales along public rights-of-way for the collection of stormwater.

9.19.4. Curb cuts and ramps for the handicapped shall be installed as required by State Law.

**Section 14.** That the Chapter 11 “Low Impact Development Technical Manual” of the Code of Ordinances, City of Titusville, is hereby created to read as follows in Exhibit A.

**Section 15. SEVERABILITY.** If any provision of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions of this Ordinance.

**Section 16: REPEAL OF CONFLICTING ORDINANCES.** All ordinances or parts of ordinances, and all resolutions and parts of resolutions, in conflict herewith are hereby repealed to the extent of such conflict.

**Section 17. EFFECTIVE DATE.** This Ordinance shall become in full force and effect upon adoption by the City Council in accordance with the Charter of the City of Titusville, Florida.

**Section 18. INCORPORATION INTO THE CODE.** This ordinance shall be incorporated into the City of Titusville Code of Ordinances and any section or paragraph, number or letter, and any heading may be changed or modified as necessary to effectuate the foregoing: Grammatical, typographical, and like errors may be corrected and additions, alterations, and omissions, not affecting the construction or meaning of this ordinance and the Code may be made.

**PASSED AND ADOPTED** this 26<sup>th</sup> day of October, 2021.

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**Daniel E. Diesel, Mayor**

**ATTEST:**

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**Wanda F. Wells, City Clerk**

## **Section 11. - LOW IMPACT DEVELOPMENT (LID)**

### **11.1 Intent**

The City encourages the use of Low Impact Development (LID) Best Management Practices (BMPs) in the design of sites and subdivisions to better protect water quality and reduce flooding risks. LID is a stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation, and transpiration by emphasizing conservation, use of on-site natural features, improved site planning, and distributed stormwater management practices that are integrated into a project's design, especially its landscaping and open space. The City of Titusville LID matrix below is intended as a reference for design professionals to consider alternatives to conventional land planning and site design, especially as it concerns stormwater management.

### **11.2 Goals of Low Impact Development (LID)**

- 11.2.1 Achieve multiple objectives –** Comprehensive stormwater management helps achieve multiple objectives such as: managing peak discharge rates and total discharge volume; providing effective stormwater treatment to minimize pollutant loadings; maintaining or improving the hydrologic pattern at a site; and retaining or harvesting stormwater onsite for non-potable purposes. LID also promotes integrating stormwater systems into the landscaping and open space of a site creating more attractive and diverse systems.
- 11.2.2 Preserve or restore natural features and resources –** The conservation or restoration of natural features such as floodplains, soils, and vegetation helps to retain or restore hydrologic functions thereby achieving the multiple objectives above.
- 11.2.3 Minimize soil compaction –** Soil compaction disturbs native soil structure, reduces infiltration rates, and limits root growth and plant survival.
- 11.2.4 Reduce and disconnect impervious surfaces –** By minimizing impervious surfaces, especially directly connected impervious surfaces, more rainfall can infiltrate into the ground.
- 11.2.5 Manage stormwater close to the source -** Using source controls to minimize the generation of stormwater or pollutants that can get into stormwater needs to be the first step in managing stormwater.
- 11.2.6 Use a BMP Treatment Train approach –** Effective stormwater management requires a comprehensive approach that incorporates source controls with multiple structural stormwater BMPs (retention, detention, and filtration) often integrated into the landscaping to create an efficient stormwater management system. See Sec 7.4.5.3 “Treatment Train” of the Stormwater Management Technical Manual.

### **11.3 Low Impact Development Plan**

11.3.1 In order for a project to receive credit for utilizing LID BMPs, an additional single page plan sheet shall be provided to identify all LIDs proposed for a project area to include the following:

- 11.3.1.1 Each LID should be identified by type and reference ID that can be used to refer to the LID in the O&M documents as needed.
- 11.3.1.2 The boundaries of the drainage basin should be outlined for each LID
- 11.3.1.3 Plan sheet shall be no larger than 11"x17" to allow for attachment to O&M documents

#### 11.4 Operations and Maintenance (O&M) Documents

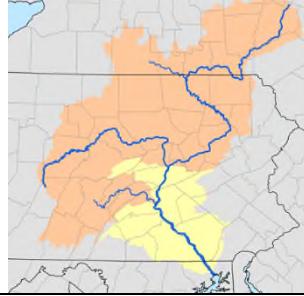
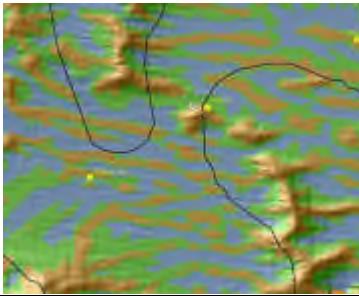
11.4.1 The proper operation and maintenance of the LID BMPs is as critical to the success of a project as is the design of the system and site. To ensure the system continues to meet its performance standards, O&M documents will be required to be submitted for each LID BMP. The Administrator may waive the O&M document requirement if it is determined to be unnecessary for a particular LID BMP. The required O&M documents shall include the following items:

- 11.4.1.1 Maintenance Covenant – A recorded document, this covenant shall establish the responsible private maintenance entity for ensuring that the LIDs included in the LID plan continue to be operational and are maintained in perpetuity. The maintenance covenant must name a secondary maintenance entity who will be responsible should the primary maintenance entity be dissolved, file for bankruptcy, or otherwise become unable to ensure the operability and/or provide the required maintenance.
- 11.4.1.2 Maintenance Schedule – An outline that provides the intervals necessary for inspection of the individual LID BMP(s) and their component elements. Included with this will be the date for the Annual Certification of the system to the City.
- 11.4.1.3 Maintenance Requirements – Outline sheets that provide the private maintenance entity with guidance of the maintenance and housekeeping steps necessary at prescribed intervals to ensure proper operation of the LID system on-site. Any manufacturer's requirements or documentation related to specific products being used shall be included.
- 11.4.1.4 Record Keeping – A portion of the O&M documents shall be devoted to recording inspections of the system as well as any modifications and maintenance activities that were required for its proper operation.
- 11.4.1.5 Inspection Forms – Copies of those forms required for certification of the site to the City.

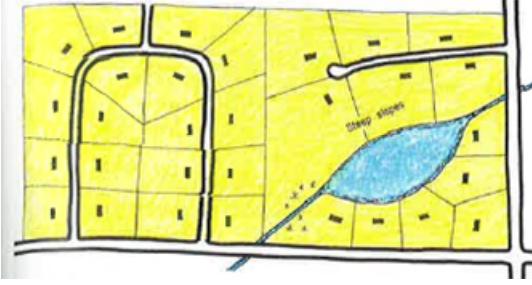
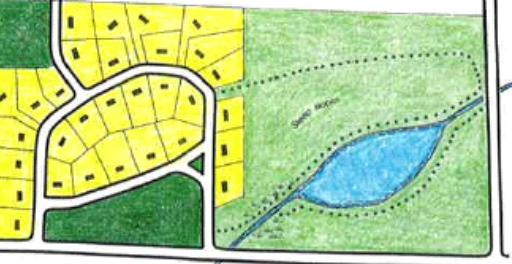
- 11.4.2 Examples of the Declaration of Covenants, Operations and Maintenance (O&M) Form, and Certification of System Compliance Form including all language required by the City are available by request.
- 11.4.3 The City will maintain a database of all LID properties and the ownership and responsible private maintenance entity for each property. Within this database will be the submitted LID plans for each site as well as an inventory of all LIDs associated with each respective site. It is the responsibility of the owner to ensure that notification is made to the City when a transfer of ownership occurs.
- 11.4.4 Inspection of the system in accordance with Maintenance Covenants shall be the sole responsibility of the property owner. Because LIDs vary in their inspection frequency, the inspection schedule shall state a certification period and designate a date range for the certification of the system. This inspection of the full system shall occur on an annual basis. It is the responsibility of the private maintenance entity to submit an inspection report to the City; although this inspection of the full system is a self-certification, property owners are highly encouraged to engage the services of a registered professional engineer or some other qualified professional with experience in the design in inspection of stormwater facilities to inspect the elements of the system, and make recommendations as needed to ensure that proper operation of the system is maintained. The City's Standard Inspection Form for Inspection of LID Sites, is available upon request.

11.5 Low Impact Development (LID) Best Management Practices (BMP) List

**Table 11.1 Low Impact Development (LID) Best Management Practices (BMPs) List**

| Site Planning BMPs |                                   |  |  |  |
|--------------------|-----------------------------------|--|--|--|
| Section            | BMP                               | Definition   | Explanation  | Requirements, Incentives, and Encouragements   |
| 11.5.1             | Inventory Site Assets: Hydrology  | Identify and retain the predevelopment hydrology to the maximum extent possible.   |  Identify and retain the predevelopment hydrology to the maximum extent possible, including natural flow, conveyance paths and patterns, and drainage features. Replicate original site hydrology by maintaining predevelopment surface runoff, infiltration, and evapotranspiration rates and hydrologic assets of the site to the fullest extent possible. | <b>Requirement:</b> This BMP is required for all subdivision plat or site plan applications per Chapter 30, Article V, Sec. 30-422 "LID Analysis". |
| 11.5.2             | Inventory Site Assets: Topography | Use existing site topography to guide the road layout and stormwater conveyance features.  |  Natural depressions should be maintained where possible to promote storage, infiltration, and treatment during typical stormwater events and to capture part of the treatment volume during extreme events   | <b>Requirement:</b> This BMP is required for all subdivision plat or site plan applications per Chapter 30, Article V, Sec. 30-422 "LID Analysis". |
| 11.5.3             | Inventory Site Assets: Soils      | Determine the hydrologic group classifications of soils and their capacity for stormwater infiltration. Designate on site all areas that will be vegetated or used in stormwater management. |  Compacting of soils will negatively affect their ability to allow stormwater to infiltrate.   | <b>Requirement:</b> This BMP is required for all subdivision plat or site plan applications per Chapter 30, Article V, Sec. 30-422 "LID Analysis". |

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| 11.5.4 | Inventory Site Assets: Vegetation   | <p>Maximize the protection of trees and native vegetation.</p>    | <p>Vegetation helps with energy conservation, temperature moderation, dust filtration, and reduces wind, noise, and glare. Vegetation also provides soil stabilization and enrichment, erosion prevention, surface drainage improvement, aquifer recharge, water pollution reduction, and wildlife habitat.</p>  | <p><b>Requirement:</b> This BMP is required for all subdivision plat or site plan applications per Chapter 30, Article V, Sec. 30-422 "LID Analysis".</p>  |
| 11.5.5 | Protect Surface Waters and Wetlands | <p>Incorporate vegetated buffers and native plantings in site design to protect surface waters (IRL, lakes, ponds, etc.) and wetland edges.</p>  | <p>Vegetated buffers slow the velocity of stormwater sheet flow and allow for several treatment processes to remove pollutants prior to reaching the surface water.</p>   | <p><b>Requirement:</b> This BMP is required along the banks of all watercourses, water bodies, or wetlands per Sec. 2.6.4 of the Environmental Protection Technical Manual. See Chapter 30, Article II, Division 4 "Shoreline protection" for shoreline protection measures.</p>   |
| 11.5.6 | Preserve Open Space                 | <p>Consider all areas where open space and pervious areas can be protected.</p>   | <p>The greater the area of undisturbed, pervious, preserved open space, the less stormwater management required.</p>   | <p><b>Requirement:</b> This BMP is required for types identified in Chapter 30, Article III, Division 3 "Open Space" of the Land Development Regulations.</p> <p><b>Incentive:</b> Projects which preserve an additional 5% open space above the minimum required shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. Where no minimum open space is required a minimum of 5% open space must be preserved to be eligible for LID incentives.</p> |

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| 11.5.7 | Natural Area Conservation – Retain Tree Canopy and Natural Landscaping                               | <p>Retain native and large tree canopies to the maximum extent possible and plan new tree plantings in areas that will maximize tree canopy over the life of the project.</p>         | <p>Trees and landscaping help retain and enhance predevelopment interception and evapotranspiration capacity. Trees absorb stormwater to limit runoff, soil erosion, and flooding. Trees also provide shade to moderate temperatures, which helps reduce the urban heat island effect.</p>    | <p><b>Requirement:</b> This BMP is required for development per Chapter 30, Article II, Division 2 “Trees and Vegetation (Preservation and Mitigation)”, AND Article III, Division 10, Subdivision 2 “Landscape Materials”, Sec. 30-324 “Landscape”.</p> <p><b>Incentive:</b> Projects which preserve an additional 5% tree canopy or natural landscaping area above the minimum required shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. Where no minimum preservation area is required a minimum of 5% native tree canopy or natural landscaping area must be preserved to be eligible for LID incentives. This incentive may include the tree mitigation incentive described in Chapter 30, Article II, Division 2 “Trees and Vegetation (Preservation and Mitigation)”, Section 30-34(i)(2) “Mitigation Plan”.</p> |
| 11.5.8 | Cluster Subdivision (Ch. 33, Article VII) and Conservation Subdivision Design (Ch. 33, Article VIII) | <p>Cluster the built infrastructure to reduce the length of roads, reduce total impervious area, and minimize overall site disturbance.</p>  <p>(Conventional Site Development)</p> | <p>This approach does not reduce the total number of permitted units per acre and provides the design engineer flexibility in planning to protect the most ecologically sensitive and valuable portions of a site. By reducing the total project impact, the use of both clustering and smaller lot sizes (in some cases) may allow the developer to increase the total number of developed units or lots, thereby increasing total project revenues.</p> <p><small>Conservation Subdivision: Construction Phase—Low Impact Development (LID) and Stormwater Treatment D. Penniman, M. Hostetler, and G. Acomb</small></p>  <p>(Clustered Site Development)</p> | <p><b>Incentive:</b> Projects which elect to utilize the Cluster Subdivision or Conservation Subdivision Design development options or similar aggregated design and satisfy all related standards shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p> <p><b>Encouraged:</b> Proposed subdivisions within the Residential Estate (RE) zoning district are encouraged to utilize the cluster design development option per Chapter 33, Article VII Cluster Subdivision.</p>   |
| 11.5.9 | Minimize Building Footprint  | <p>Reduce the impervious footprint of the project and disturbance of the site by considering multi-story building design options.</p>   | <p>Buildings with more than one story maximizes the square footage to roof area ratio and lessens the stormwater runoff from the site.</p>    | <p><b>Requirement:</b> Building footprint is limited by the maximum building coverage listed for each zoning district in Chapter 28, Article VI.</p> <p><b>Incentive:</b> Projects which utilize multi-story buildings to reduce building coverage to 50% or less of the maximum building coverage permitted in the applicable zoning district shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. For projects in zoning districts without a maximum building coverage the applicant must demonstrate the reduced building footprint by comparing the maximum one-story buildout potential with the proposed multi-story building.</p>  |

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| 11.5.10 | Minimize Total Impervious Surface Area             | <p>Reduce the impervious surface area to reduce the amount of stormwater management required.</p>   | <p>Reducing impervious surface areas can minimize the degree to which the heat island effect is experienced in a community. Strategies to assist in accomplishing this include designing streets to reduce street width and the total street length; consider FDOT's context classification system to determine key design criteria of roadways. In a subdivision, narrower lots and a clustered design maximize the number of lots per unit length of pavement.</p> <p>Additionally, design smaller parking space dimensions and the fewest number of parking spaces necessary. On-street parking where permitted could be utilized to minimize the need for off-street parking areas. Consider using pervious pavement. Maximize infiltration capacity of parking areas by using structurally-reinforced bioswales rather than curbed landscape islands when permitted. Where possible, design impervious areas to first drain into interior recessed rain garden islands. Any improvements in the public right of way will require a right of way agreement between the applicant and the City. Required design standards for roads, sidewalks, parking, trails, and paths can be found in the City's <b>Transportation Infrastructure Technical Manual (Section 9)</b>. <small>Low-Impact Development &amp; Green Infrastructure: Pollution Reduction Guidance for Water Quality in Southeast Florida E. Bean, Ph.D., P.E. L. Jarrett, J. Kipp Searcy, M. Szoka</small></p>  | <p><b>Requirement:</b> Impervious surface area is limited by the maximum lot coverage listed for each zoning district in Chapter 28, Article VI.</p> <p><b>Incentive:</b> Projects which utilize LID design techniques to reduce lot coverage to 75% or less of the maximum lot coverage permitted in the applicable zoning district shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. For projects in zoning districts without a maximum lot coverage the applicant must demonstrate the reduced total impervious surface by comparing the maximum impervious surface buildout potential with the proposed plan minimizing total impervious surface.</p> |
| 11.5.11 | Minimize Directly Connected Impervious Area (DCIA) | <p>Disconnect downspouts from roofs, small parking lots, courtyards, driveways, sidewalks and other impervious surfaces.</p>   | <p>Directly connected impervious areas (DCIA) allow runoff to be conveyed without interception by permeable areas that allow for infiltration and treatment. Direct runoff to flow onto adjacent pervious areas where it is filtered or infiltrated. <small>Pinellas County Stormwater Manual February 1, 2017</small></p>  | <p><b>Incentive:</b> Projects that demonstrate a reduction in DCIA of at least 25% over a conventional design shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p>   |

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| 11.5.12                    | Curb Elimination and Curb Cuts           | <p>Eliminate curbs and allow stormwater to drain in sheet flow from roadways onto vegetated areas.</p>   | <p>Draining to vegetated areas reduces the rate and timing of peak discharge and can help meet pollutant removal requirements. Parking lots or other paved areas must be graded so that stormwater flows through the curb cuts onto the vegetated area.</p> <p><small>Low-Impact Development &amp; Green Infrastructure: Pollution Reduction Guidance for Water Quality in Southeast Florida E. Bean, Ph.D., P.E. L. Jarrett, J. Kipp Searcy, M. Szoka</small></p> <p><b>Note:</b> Any design incorporating swales in the right of way will require a right of way agreement between the applicant and the City.</p>  | <p><b>Incentive:</b> Projects that design landscape islands, medians, or vegetated swales without curbs or with curb cuts for the collection of stormwater per Sec. 9.7 of the Transportation Technical Manual shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p> <p>The curbing along private rights-of-way or internal to a site's design may be waived with an administrative waiver.</p> <p>The curbing along public rights-of-way may be waived with a Development Review Committee (DRC) waiver.</p>  |
| <b>Source Control BMPs</b> |  |  |  |   |
| 11.5.13                    | Minimize Soil Disturbance and Compaction | <p>Clearly delineate the clearing, grading, and construction areas on the ground and instruct all construction personnel to minimize soil compaction over the entire site. Clearly designate areas intended for infiltration BMPs and do not permit heavy construction equipment to traverse these areas.</p>  | <p>Avoid compaction of soil throughout the site. Compaction of soils negatively affects the ability of stormwater to infiltrate. Use existing roads, future road areas, or previously compacted areas for materials staging.</p>   | <p><b>Required:</b> Limitations on clearing, grading, and compaction adjacent to protected trees, canopy trees, or the protective root zone of such trees are described in Sec. 2.5 Tree Protection During Construction of the Environmental Protection Technical Manual.</p> <p><b>Incentive:</b> Projects which demonstrate a plan to minimize soil disturbance and compaction over the entire site shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p>  |
| 11.5.14                    | Build with the Landscape Slope           | <p>Design buildings and infrastructure around existing topography, rather than re-contouring the land to fit the building design.</p>    | <p>Natural depressions promote storage, infiltration, and treatment of stormwater. Recontouring requires the removal of existing landscaping and compacts the soil.</p> <p><small>Escambia County Low Impact Design BMP Manual September 30, 2016<br/>Dr. M. P. Wanielista, P.E. and E. Livingston</small></p>    | <p><b>Required:</b> Streets are required to be designed as closely as practicable to the original topography per Chapter 30, Article III, Division 7, Sec. 30-229 of the Code. In the Area of Critical Concern, the reduction of natural topography is limited per Chapter 30, Article III, Division 6, Subdivision 2, Sec. 30-207(a)(4) of the Code.</p> <p><b>Incentive:</b> Projects which meet the reduction of natural topography limitation described in Chapter 30, Article III, Division 6, Subdivision 2, Sec. 30-207(a)(4) shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p> |

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| 11.5.15 | Retain Native Landscapes at the Lot Level    | <p>Minimize the planned area requiring imported or constructed landscapes.</p>   | <p>Native landscapes require fewer supplements and irrigation. Plant and maintain Florida-friendly or native vegetation wherever possible. Minimize use of turf grass and use it only where outside active recreation is planned and frequent. <small>Policies that Address Sustainable Landscaping Practices, UF/IFAS Publication #CIR1519 M. Romero and M. E. Hostettler</small></p>    | <p><b>Requirement:</b> This BMP can be used to meet the requirements for residential development described in Chapter 30, Article III, Division 10, Subdivision 2, Sec. 30-324 of the Code.</p> <p><b>Incentive:</b> Projects retaining 10% native vegetation per lot shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p>                             |
| 11.5.16 | Florida-Friendly Landscaping and Fertilizers | <p>Plan your site for low-impact and resource-efficient landscapes that have the capacity to thrive without supplemental inputs of irrigation, fertilizers, pesticides, herbicides, etc.</p>    | <p>Minimizes the runoff of these supplements into receiving waterbodies. <small>Policies that Address Sustainable Landscaping Practices, UF/IFAS Publication #CIR1519 M. Romero and M. E. Hostettler</small></p>   | <p><b>Requirement:</b> 10% percent of all required landscaping areas are required to use Florida Friendly Landscaping per Chapter 30, Article III, Division 10, Subdivision 2, Sec. 30-324 of the Code.</p> <p><b>Incentive:</b> Projects using at least 50% percent Florida Friendly Landscaping shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p> |
| 11.5.17 | Rainfall Interceptor Trees                   | <p>Retain and/or plant trees within 15 feet of impervious areas. Trees of species whose roots are known to cause damage to public roadways or other public works shall not be planted within minimum required distances of Chapter 30, Article III, Division 10, Subdivision 2, Sec. 30-321(j) "Pavement edges" and Subdivision 6, Sec. 30-372(a) "Planting standards" of the Code.</p>  | <p>Trees intercept stormwater and retain a significant volume of the captured water on their leaves and branches allowing for evaporation and providing runoff volume reduction benefits. Interceptor trees also provide enhanced aesthetic value, shade to cool pavement and reduce surface runoff temperatures, aid in the removal of air pollutants and noise reduction and help to reduce the heat island effect. <small>Urban Forests &amp; Stormwater Management Water retention, infiltration, and transpiration January 11, 2018 S. Farmer</small></p>  | <p><b>Incentive:</b> Projects preserving or planting trees within 15 feet of impervious surfaces and outside the required distances of Chapter 30, Article III, Division 10, Subdivision 2, Sec. 30-321(j) and Subdivision 6, Sec. 30-372(a) shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p>  |

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| 11.5.18                           | Install Efficient Irrigation Systems | When irrigation is necessary, use water conserving, low flow, programmable, and/or targeted irrigation systems.   | Reduced demand for potable water. Landscaping beds with shrubs should be on separate zones from turf, and drip irrigation is recommended.  | <b>Required:</b> All irrigation systems are required to have an automatic timer and rain sensor per Chapter 30, Article III, Division 10, Subdivision 6, Sec. 30-373 of the Code.<br><br><b>Incentive:</b> Projects using irrigation systems that incorporate low flow, separate water-use zones, and/or drip irrigation shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. |
| <b>Structural Stormwater BMPs</b> |                                      |   |  |   |
| 11.5.19                           | Exfiltration Trench                  | A subsurface retention system consisting of a conduit such as perforated pipe surrounded by natural or artificial aggregate which temporarily stores and infiltrates stormwater runoff. | Stormwater passes through the perforated pipe and infiltrates through the trench sides and bottom into the shallow ground water aquifer. System provides a reduction of stormwater volume that reduces pollutant loads. Additionally, substantial amounts of suspended solids, oxygen demanding materials, heavy metals, bacteria, some varieties of pesticides and nutrients such as phosphorus may be removed as runoff percolates through the soil profile.<br><small>The Florida Development Manual: A Guide to Sound Land and Water Management, 1988 E. E. Livingston, J. Cox, and P. Sanzone</small> | <b>Incentive:</b> Projects that demonstrate a minimum 25% reduction of the total stormwater volume through the use of this BMP shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. Projects using multiple BMPs to reach the reduction target will not be eligible for incentives.   |
| 11.5.20                           | Underground Storage and Retention    | An underground storage system with a drainfield. Kirk Point Park is an example of the use of this BMP.  | These systems are sometimes used where land values are high, and the owner/applicant desires to minimize the potential loss of usable land.<br><small>Escambia County Low Impact Design BMP Manual September 30, 2016 Dr. M. P. Wanielista, P.E. and E. Livingston</small>   | <b>Incentive:</b> Projects that demonstrate a minimum 25% reduction of the total stormwater volume through the use of this BMP shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. Projects using multiple BMPs to reach the reduction target will not be eligible for incentives.   |

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| 11.5.21 | Rain Gardens (Bioretention) | <p>Small retention basins that are integrated into a site's landscaping.</p>                | <p>Located in a landscape area or within parking lot islands to receive runoff from hard surfaces such as a roof, a sidewalk, a driveway, or parking area. Rain gardens slow down the rush of water from impervious surfaces, hold the water for a short period of time, and allow it to naturally infiltrate into the ground or evaporate. The combination of soil, microbes and vegetation provide filtration, sedimentation, adsorption, ion exchange of solids and metals as well as biological absorption and decomposition of organics and nutrients present in the stormwater. <small>Florida Field Guide to Low Impact Development Bioretention Basins/Rain Gardens University of Florida Program for Resource Efficient Communities, M. Clark and G. Acomb</small></p>  | <p><b>Incentive:</b> Projects that demonstrate a minimum 25% reduction of the total stormwater volume through the use of this BMP shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. Projects using multiple BMPs to reach the reduction target will not be eligible for incentives.</p> |
| 11.5.22 | Vegetated Swales            | <p>A manmade trench meeting the definition in Chapter 403.803(14), Florida Statutes.</p>  | <ul style="list-style-type: none"> <li>Has a top width to depth ratio of the cross-section equal to or greater than 6:1, or side slopes equal to or flatter than 3 feet horizontal to 1-foot vertical;</li> <li>Contains contiguous areas of standing or flowing water only following a rainfall event;</li> <li>Is planted with or has stabilized vegetation suitable for soil stabilization, stormwater treatment, and nutrient uptake; and</li> <li>Is designed to take into account the soil erodibility, soil percolation, slope, slope length, and drainage area so as to prevent erosion and reduce pollutant concentration of any discharge.</li> </ul>    | <p><b>Incentive:</b> Projects that demonstrate a minimum 25% reduction of the total stormwater volume through the use of this BMP shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. Projects using multiple BMPs to reach the reduction target will not be eligible for incentives.</p> |

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| 11.5.23 | Vegetated Natural Buffers | <p>Areas with natural vegetation set aside between developed areas and a receiving water or wetland for stormwater treatment.</p>  | <p>Buffers are intended for use to avoid the difficulties associated with the construction and maintenance of backyard swales on land controlled by individual homeowners. Potential impacts to adjacent wetlands and upland natural areas are reduced because fill is not required to establish grades that direct stormwater flow from the back of the lot towards the front for collection in the primary stormwater management system. This BMP can serve as a wildlife corridor, reduce noise, and reduce the potential for siltation into receiving waters.</p> <p>Vegetative natural buffers are not intended to be the primary stormwater management system for residential developments. They are most commonly used only to treat those rear-lot portions of the development that cannot be feasibly routed to the system serving the roads and fronts of lots. <small>Pinellas County Stormwater Manual February 1, 2017</small></p> | <p><b>Incentive:</b> Projects using this BMP to provide additional buffers beyond those required in Chapter 30, Article III, Division 10, Subdivision 3 "Landscape Yard (Buffer/Screen)" of the Code shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p> |
| 11.5.24 | Pervious Pavements        | <p>Pervious pavement systems are retention systems.</p>   | <p>Treatment efficiency is based on the amount of the annual runoff volume infiltrated which depends on the available storage volume within the pavement system, the underlying soil permeability, and the ability of the system to readily recover this volume. <small>Permeable Pavement Systems: Technical Considerations, UF/IFAS Publication #AE530</small><br/> <small>E. Bean, M. Clark, and B. Larson</small> See Sec. 7.7 "Pervious Pavement" of the Stormwater Management Technical Manual.</p>    | <p><b>Incentive:</b> Projects using a minimum of 1,000 square feet of pervious pavement instead of an impervious surface, such as asphalt or concrete, shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p>   |

|         |   |  |   |  |
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| 11.5.25 | Green Roofs with Cisterns                                     | <p>A vegetated roof followed by storage in a cistern (or other similar device) for the filtrate that is reused for irrigation.</p>   | <p>The greenroof and cistern system functions to attenuate, evaporate, and lower the volume of discharge and pollutant load coming from the roof surface. Greenroof systems have been shown to assist in stormwater management by attenuating hydrographs, neutralizing acid rain, reducing volume of discharge, and reducing the annual mass of pollutants discharged. They are most applicable to commercial or public buildings, but have been successfully used on residences. <small>Escambia County Low Impact Design BMP Manual September 30, 2016</small><br/>Dr. M. P. Wanielista, P.E. and E. Livingston</p>   | <p><b>Incentive:</b> Projects that demonstrate a minimum 25% reduction of the total stormwater volume through the use of this BMP shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. Projects using multiple BMPs to reach the reduction target will not be eligible for incentives.</p> |
| 11.5.26 | Stormwater Harvesting   | <p>A system which uses diverted stormwater for beneficial purposes, such as a primary source of irrigation, thus reducing the stormwater volume and mass of pollutants discharged from a retention or wet detention system.</p> <br> | <p>Harvested stormwater can be used for numerous uses including outdoor irrigation, irrigating green roofs, washing vehicles, industrial cooling and processing, and toilet flushing. The use of stormwater in place of potable water has been estimated to save 75-95% of the cost of using only potable water. <small>Escambia County Low Impact Design BMP Manual September 30, 2016 Dr. M. P. Wanielista, P.E. and E. Livingston</small> Methodologies and design examples can be found in the St Johns Manual, Sarasota County LID Document, the FDEP Stormwater Handbook and Escambia County LID Manual, and others. These examples cover the Water Quantity and the Water Quality elements. The Water Quantity calculations are a variation of calculations commonly conducted for wet ponds. For the Water Quality calculations the state of the practice is the use the DEPs BMPTRAINS software which is in the public domain.</p> | <p><b>Incentive:</b> Projects that demonstrate a minimum 25% reduction of the total stormwater volume through the use of this BMP shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. Projects using multiple BMPs to reach the reduction target will not be eligible for incentives.</p> |
| 11.5.27 | Up-Flow Filter Systems with Biosorption Activated Media (BAM) | <p>A system where stormwater enters the bottom of the filters and exits from the top through a nutrient reducing media.</p>  | <p>The value of a system using this flow direction is the filter that has a lower potential to plug with debris and particulates. <small>Alachua County Stormwater Treatment Manual, October 2018</small></p>   | <p><b>Incentive:</b> Projects using this BMP demonstrated to show at least 40% total nitrogen removal using the most current BMPTrains model shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p>  |

|         |   |   |  |  |
|---------|---|---|--|--|
| 11.5.28 | Managed Aquatic Plant Systems (MAPS)                      | <p>An aquatic plant-based BMP that removes nutrients through a variety of processes related to nutrient uptake, transformation, and microbial activities. Examples of MAPS include planted littoral zones and floating wetland mats.</p>    | <p>Generally, wet detention systems by themselves can't achieve the required levels of nutrient removal from stormwater. MAPS can be incorporated into a wet detention BMP treatment train to provide additional treatment and nutrient removal after the wet pond has provided reduction of pollutants through settling and other mechanisms that occur within the wet pond. The long-term survival of littoral zones is best when they are not located adjacent to private lots. Consequently, littoral zones typically are located near the outfall of a wet detention pond or along areas with common ownership. Through the periodic removal of mature macrophytes from the floating wetland island or mat, accumulated nutrients are prevented from re-entering the aquatic ecosystem at senescence.</p> <p><small>State of Florida Best Management Practices for Stormwater Runoff, April 2015 Stormwater Management Academy, University of Central Florida</small></p> <p><b>See Sec. 7.4.5.3 "Treatment Train" of the Stormwater Management Technical Manual.</b></p> | <p><b>Incentive:</b> Projects using this BMP to treat or manage at least 25% of the total stormwater volume on site shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual.</p>   |
| 11.5.29 | Biofiltration Systems                                     | <p>Biofilters or biofiltration systems use engineered media, such as Biosorpcion Activated Media (BAM), to enhance nutrient removal when native soils are inadequate for pollutant removal or infiltration. Examples include rain gardens, landscape planter boxes, and tree box filters.</p>  | <p>Biofiltration BMPs can serve both small and large watersheds. The large watersheds typically discharge into retention basins or wet detention systems. The wet detention systems will then use up-flow filters on the discharge to further remove nutrients. Small drainage areas discharge into retention areas or rain gardens that have BAM within them to limit nitrates. These systems are highly configurable and thus highly applicable for on-site treatment in urban development, especially in areas undergoing redevelopment.</p> <p><small>Escambia County Low Impact Design BMP Manual September 30, 2016. Dr. M. P. Wanielista, P.E. and E. Livingston</small></p>   | <p><b>Incentive:</b> Projects that demonstrate a minimum 25% reduction of the total stormwater volume through the use of this BMP shall be eligible for the incentives identified in Sec. 11.6 LID Incentives Matrix of the Low Impact Development Technical Manual. Projects using multiple BMPs to reach the reduction target will not be eligible for incentives.</p> |
| 11.5.30 | Any other Low Impact Development Best Management Practice | <p>Other BMPs will be considered if scientific or engineering performance data demonstrates the effectiveness of the practice.</p>  |   | <p><b>Incentive:</b> Incentive eligibility for any other LID BMPs will be determined by the administrator on a case by case basis using scientific or engineering product performance data.</p>  |

**Table 11.2 Low Impact Development Incentives Matrix**

| Low Impact Development BMPs          |  | Parking Incentives                         |  |   |   |   | Open Space, Landscape, Buffer, & Setback Incentives |   |  |  | Other Incentives                        |                                 |                       |   | See Noted Section for Specific Standards |        |         |
|--------------------------------------|--|--|--|---|---|---|---|---|--|--|---|---------------------------------|-----------------------|---|--|--------|---------|
|                                      |  | On-Street Parking <sup>2</sup> Sec. 30-283 | Parking Count Flexibility <sup>2</sup> | Reduced curbing requirements <sup>1,2</sup> | Reduced Parking Space Dimensions <sup>2</sup> Sec. 9.17.1.1 | Satellite (Shared) Parking <sup>1</sup> | BMP Permitted within Buffer <sup>1</sup>            | BMP Area Credited as Landscaping <sup>1</sup> | BMP Area Credited as Open Space <sup>1</sup> | Reduced Building Setbacks <sup>1</sup> | Additional Building Height <sup>3</sup> | Additional Density <sup>3</sup> | Expedited Application | Reduced Stormwater Freeboard <sup>1</sup> | Wet Ponds Outside of ACC <sup>1</sup>    |        |         |
| Site Planning BMPs                   | Protect Surface Waters and Wetlands  |  |  |   | ●   |   |   |   |  |  |   |                                 | ●                     |   | ●  | 11.5.5 |         |
|                                      | Preserve Open Space  |  |  |   | ●   | ●                                       |   |   |  |  |   |                                 | ●                     |   | ●  | 11.5.6 |         |
|                                      | Natural Area Conservation - Retain Tree Canopy and Natural Landscaping                           | ●  |  |   | ●   | ●                                       |   |   |  | ●                                      |   |                                 | ●                     |   | ●  | 11.5.7 |         |
|                                      | Cluster Design & Conservation Subdivision  |  |  |   |   |   |   |   |  | ●                                      |   |                                 | ●                     | ●   | ●  | 11.5.8 |         |
|                                      | Minimize Building Footprint  |  | ●                                      |   |   |   |   |   |  |  | ●                                       |                                 |                       |   | ●  | ●      | 11.5.9  |
|                                      | Minimize Total Impervious Surface Area   | ●  | ●                                      |   | ●   | ●                                       |   |   |  |  |   | ●                               |                       |   | ●  | ●      | 11.5.10 |
|                                      | Minimize Directly Connected Impervious Area (DCIA)   | ●  | ●                                      |   | ●   | ●                                       |   |   |  |  |   |                                 |                       |   | ●  | ●      | 11.5.11 |
|                                      | Curb Elimination and Curb Cuts   | ●  | ●                                      |   | ●   |   |   |   |  |  |   |                                 |                       |   |  | ●      | 11.5.12 |
| Source Control BMPs                  | Minimize Soil Disturbance and Compaction   |  |  |   | ●   |   |   |   |  |  |   |                                 |                       |   |  | ●      | 11.5.13 |
|                                      | Build with the Landscape Slope   |  |  |   | ●   | ●                                       |   |   |  | ●                                      |   |                                 |                       |   |  | ●      | 11.5.14 |
|                                      | Retain Native Landscapes at the Lot Level  |  |  |   |   |   |   |   |  | ●                                      |   |                                 | ●                     |   |  | ●      | 11.5.15 |
|                                      | Florida-Friendly Landscaping and Fertilizers   | ●  | ●                                      |   |   |   |   |   |  |  |   |                                 | ●                     |   |  | ●      | 11.5.16 |
|                                      | Rainfall Interceptor Trees   | ●  | ●                                      | ●   |   |   |   |   | ●  | ●                                      |   |                                 |                       |   |  | ●      | 11.5.17 |
|                                      | Install Efficient Irrigation Systems   |  |  |   |   |   |   |   |  |  |   |                                 |                       |   |  | ●      | 11.5.18 |
|                                      | Exfiltration Trenches  | ●  | ●                                      |   | ●   | ●                                       | ●   |   |  |  |   |                                 |                       |   | ●  | ●      | 11.5.19 |
| Structural Stormwater BMPs           | Underground Storage and Retention Systems  | ●  |  |   | ●   | ●                                       | ●   |   |  | ●                                      |   |                                 | ●                     | ●   | ●  | ●      | 11.5.20 |
|                                      | Rain Gardens (Bioretention)  |  |  | ●   |   |   |   |   |  |  |   |                                 |                       |   |  |        | 11.5.21 |
|                                      | Vegetated Swales   |  |  |   |   |   |   | ●   |  |  |   |                                 |                       |   | ●  | ●      | 11.5.22 |
|                                      | Vegetated Natural Buffers  |  |  |   |   |   |   |   | ●  |  |   |                                 |                       |   |  | ●      | 11.5.23 |
|                                      | Pervious Pavements   | ●  | ●                                      |   | ●   |   |   |   |  |  |   |                                 |                       |   | ●  | ●      | 11.5.24 |
|                                      | Green Roofs with Cisterns  | ●  | ●                                      |   | ●   |   |   |   | ●  | ●                                      |   |                                 |                       |   | ●  | ●      | 11.5.25 |
|                                      | Stormwater Harvesting Systems  | ●  | ●                                      |   | ●   | ●                                       |   |   |  |  | ●                                       |                                 |                       |   | ●  | ●      | 11.5.26 |
|                                      | Up-Flow Filter System with BAM   | ●  | ●                                      |   | ●   |   |   |   | ●  |  | ●                                       |                                 |                       |   | ●  | ●      | 11.5.27 |
|                                      | Detention Pond with Managed Aquatic Plant Systems  |  | ●                                      |   | ●   |   |   |   | ●  | ●                                      | ●                                       |                                 |                       |   | ●  | ●      | 11.5.28 |
|                                      | Biofiltration Systems (BAM-enhanced rain gardens, landscape planter boxes, and tree box filters) | ●  | ●                                      | ●   | ●   | ●                                       | ●   | ●   | ●  | ●                                      | ●                                       |                                 |                       | ●   | ●  | ●      | 11.5.29 |
| Any other Low Impact Development BMP |  |  |  |   |   |   |   |   |  |  |   |                                 |                       |   |  |        | 11.5.30 |

<sup>1</sup> An administrative waiver or exception is required to meet the standards described in Chapter 30, Article I, Division 1, Sec. 30-3 "Standards for administrative exceptions".<sup>2</sup> A Development Review Committee (DRC) waiver is required. Waivers to the Technical Manuals are described in Chapter 34, Article V, Division 5 of the Code.<sup>3</sup> A public hearing may be required to permit the increase.

11.7 Minimum Parking Requirements for Development Utilizing Low Impact Development

11.7.1 Developments utilizing certain (LID) Best Management Practices (BMPs) as described in Table 11.2 shall be eligible for the incentivized rate of required parking spaces as described in Table 11.3. All other requirements in the Transportation Infrastructure Technical Manual Section 9 shall apply.

**Table 11.3 - Minimum Parking Requirements for Development Utilizing Low Impact Development**

| Use   | Spaces Required | Min Per Unit   | Max Per Unit        |
|---|-----------------|--|---------------------|
| ACLF's, Convalescent Homes, Nursing Homes, and Rest Homes                               | 1<br>1          | Every 5 patient beds, and<br>Each Employee on largest shift  |                     |
| Assembly Areas, Auditoriums   | 1               | 250 s.f. of GFA  |                     |
| Churches, temples, places of worship  | 1               | 100 s.f. of GFA  | 200% of the minimum |
| Funeral Homes   | 1               | 150 s.f. of GFA  | 100 s.f. of GFA     |
| Hospitals   | 1<br>1<br>1     | Doctor space for every ten patient beds and<br>Every four patient beds, and<br>Every one and one-half employees, exclusive of doctor parking spaces. |                     |
| Hotels and Motels   | 1               | Each rental unit<br>and 25% the rate for each accessory use  |                     |
| Manufacturing/Industrial  | 1               | 1,000 s.f. of GFA  |                     |
| Medical/Dental Clinics and Offices  | 1               | 250 s.f. of GFA  | 150 s.f. of GFA     |
| Multi-Family (R-2, R-3) and RMH (1&2) Developments.<br>*See additional standards below. | 1               | 1.4 dwelling unit  |                     |
| *R-2 - Townhouses   | 2               | With direct access to a public street  |                     |
| *R-3 - Townhouses   | 2               | Two spaces on the same lot as the dwelling unit or one (1) on site space and one (1) remote  |                     |

|  |   |  |                 |
|--|---|--|-----------------|
|  |   | guest parking space within three (300) hundred feet of the unit. |                 |
| *Duplex, triplex, quadraplex and other multifamily units | 1 | 1.4 dwelling unit  |                 |
| Museums  | 1 | 400 s.f. of GFA  |                 |
| Personal Services  | 1 | 400 s.f. of GFA  |                 |
| Private Child Care Center                                | 1 | 500 s.f. of GFA  |                 |
| Private Clubs, Fraternities, Lodges                      | 1 | 200 s.f. of GFA  |                 |
| Professional Offices                                     | 1 | 500 s.f. of GFA  | 250 s.f. of GFA |
| Public Use and Community Services                        | 1 | 300 s.f. of GFA  |                 |
| Restaurants (eating places)                              | 1 | 200 s.f. of GFA  |                 |
| Retail Sales and Services                                | 1 | 300 s.f. of GFA  | 200 s.f. of GFA |
| Theaters   | 1 | 200 s.f. of GFA  |                 |
| Warehouse  | 1 | 4,000 s.f. of GFA  |                 |
| GFA = Gross Floor Area<br>s.f. = square foot             |   |  |                 |

11.7.2 For any use not listed above, the number of parking spaces may be determined by a parking analysis using ITE parking generation rates, other data and the Urban Land Institute. The Administrator must approve all parking studies prior to acceptance.