
Amend the LDC as follows:

1 **6.05.01 Water Management Requirements**

2 A complete stormwater management system shall be provided for all areas within the
3 **subdivision** or **development**, including **lots**, **streets**, and **alleys**.

4 A. The system design shall meet the applicable provisions of the current County codes and
5 ordinances, SFWMD rules and regulations pursuant to Florida Statutes, and the Florida
6 Administrative Code, and any other affected state and federal agencies' rules and
7 regulations in effect at the time of preliminary **subdivision** plat submission. Water
8 management areas will be required to be maintained in perpetuity according to the
9 approved plans. Water management areas not maintained will be corrected according to
10 approved plans within 30 days.

11 B. Where stormwater runoff from outside the **subdivision** or **development** historically
12 passes on, over, or through areas of the **subdivision** or **development**, such runoff shall
13 be included in the stormwater system design. The system shall be designed for long life,
14 low cost maintenance by normal methods and provide for optimal on-site detention of
15 stormwater runoff and groundwater recharge in accordance with applicable County and
16 SFWMD regulations.

17 C. Any **structure** with an outside wall which is closer than 10 feet from a side property line
18 shall install properly sized (minimum twenty-four-square inch cross-section) gutters and
19 downspouts to direct stormwater away from neighboring properties and toward front
20 and/or rear swales or retention/detention areas.

21 D. In-ground percolation type retention systems such as rock trenches, exfiltration trenches
22 or beds, infiltrator type systems, gallery type systems, etc., shall not be used to achieve
23 water quality retention for residential **subdivisions**. Rear **yard** open retention systems
24 shall likewise not be designed to achieve water quality retention on projects submitted
25 after January 1, 2002. All retention systems for projects designed after January 1, 2002,
26 shall be on common property owned and maintained by a homeowners' association or
27 similar entity.

28 E. Any canal which forms a part of the public water management system shall be dedicated
29 for care and maintenance per the requirements of the governmental agency which has
30 jurisdiction. Canals located entirely within the **subdivision** and which do not form a part
31 of the public water management system shall be dedicated to the public, without the
32 responsibility for maintenance, as a drainage **easement**. A maintenance **easement**, of a
33 size acceptable to the County Manager or designee or other governmental agency with
34 maintenance responsibility, shall be provided **adjacent** to the established drainage
35 **easement**, or the drainage **easement** created must be of a size suitable for the
36 proposed canal and its maintenance.

37 ~~F. Stormwater Retention/Detention Design for **Single-Family Dwelling Units, Two-Family**~~
38 ~~**Dwelling Units and Duplexes.**~~

39 1. ~~Applicability. Any application for a building permit to allow the **development** or~~
40 ~~redevelopment of a **single-family** or **two-family dwelling** or **duplex** submitted~~
41 ~~after July 1, 2008, except for the following conditions:~~

42 a. ~~Any application within the boundaries of **development** projects that have:~~
43 ~~(1) been permitted by the South Florida Water Management District for~~
44 ~~Surface Water Management or Environmental Resource Protection and~~
45 ~~(2) have a central surface water management collection, storage,~~
46 ~~treatment and discharge system;~~

- b. ~~A one-time addition is allowed for certain sized homes, as set forth below;~~
 or
 c. ~~An application accompanied by a stormwater management plan, signed and sealed by a registered Florida Professional Engineer.~~

Table 6.05.01 F.

Lot Size	Lot Coverage	Impervious Area Coverage
Under 11,000 sq. ft.	25%	40%
11,000 sq. ft. to 52,999 sq. ft. and 100 ft. or greater in width	2,750 sq. ft. +5% of area in excess of 11,000 sq. ft.	4,400 sq. ft. +5% of area in excess of 11,000 sq. ft.
11,000 sq. ft. to 52,999 sq. ft. and less than 100 ft. in width	2,750 sq. ft. +2% of area in excess of 11,000 sq. ft.	4,400 sq. ft. +2% of area in excess of 11,000 sq. ft.
53,000 sq. ft. and over	4,850 sq. ft. +3% of area in excess of 53,000 sq. ft.	6,500 sq. ft. +2% of area in excess of 53,000 sq. ft.

2. ~~The maximum allowable ratio of lot coverage and impervious area coverage to the total lot area shall be as provided for in Table 6.05.01 F. unless accompanied by an engineer's analysis as specified below.~~
- a. ~~The site drainage analysis shall include water quality calculations to SFWMD standards and water quantity calculations done to accommodate the runoff, from area in excess of the above ratio, from a 5-year 1-day storm and shall include a percolation test done by a qualified engineer or technician. If the site will use a drainfield/septic tank for sewage treatment/disposal, the wet season water table calculations for drainage must match that used for the drainfield design.~~
- b. ~~The application site plan shall list all required separation distances between wells, drainfield systems, and stormwater retention/detention areas. The calculations may be done on the site plan or may be in a separate Engineer's report, but must be signed and sealed by the Engineer.~~
- c. ~~The water surface area of swimming pools and ponds is not considered as impervious area for the purposes of the calculations in Table 6.05.01 F.~~
3. ~~A one-time addition to an existing residence will be allowed after July 1, 2008. The addition will be limited to 3 percent of the lot area up to a maximum of 1,000 square feet as long as that one-time addition does not exceed the area in Table 6.05.01 F. by more than 3 percent of the lot area or more than 1,000 square feet.~~

GE. The design of the stormwater management system shall fully incorporate the requirements of the Interim Watershed Management regulations of LDC section 3.07.00.

HG. **Street grades.** **Street grades** must be determined in relation to the **drainage facilities** for the **subdivision** and must not exceed four percent nor be less than 0.3 percent, unless otherwise approved by the County Manager or designee pursuant to section 10.02.04 of the LDC. **Street grades** must be shown on the **development plans** by direction and percent of fall on the road profiles.

H. Rainfall and runoff criteria. The system must be designed for "design **floods**" resulting from rain storms and antecedent conditions for all system components in accordance with current Collier County and South Florida Water Management District criteria.

1. Runoff coefficients. Existing land usage will be considered for the selection of proper runoff coefficients within the drainage basins involved, whether within the **subdivision** or **development** or not.

- 1 2. Lakes. Artificial lakes and retention basins proposed as part of a stormwater
2 retention system for on-site water management must be designed and shall be
3 consistent with other ordinances or regulations of Collier County, the state or the
4 region. All lakes will be set back from **abutting** roadways or intersections
5 pursuant to the design standards established in sections 22-106 through 22-119
6 of the Code of Laws and Ordinances.
- 7 J. Stormwater outfalls. Stormwater runoff must be conducted to positive outfalls that can be
8 permanently maintained, practicably and legally. Outfalls to existing waterways, canals,
9 preserve or conservation areas, lakes or storm sewers will be acceptable provided it can
10 be demonstrated through a professional engineering study to the County Manager or
11 designee that such receiving systems have adequate capacity to receive the proposed
12 quantity and quality of the additional flow.
- 13 1. Side ditches or swales along public or private roads shall not be accepted as
14 suitable positive outfalls except as may be specifically accepted under the
15 provisions of the LDC by the County Manager or designee and by the Florida
16 Department of Transportation, if applicable. The storage of stormwater runoff in
17 other existing or proposed ditches or swales within a public or private **right-of-**
18 **way** will be permitted for volume storage when approved under South Florida
19 Water Management District design criteria, but will not be utilized to satisfy the
20 stormwater storage (quality) requirements of a **development's** master water
21 management system.
- 22 K. Major waterway. Improvement or establishment of major waterways and canals will be
23 developed in full accord with applicable stormwater management criteria. Engineering
24 data, criteria, and suitable calculations shall be submitted to the County Manager or
25 designee prior to approval of construction plans.
- 26 1. Roadways over major waterways will be **structures** approved by the County
27 Manager or designee, sized to maintain flow capacity, designed to assure long
28 life and minimal maintenance. Construction must meet all current Florida
29 Department of Transportation Standard Specifications for Road and Bridge
30 Construction, as amended, unless otherwise approved by the County Manager or
31 designee pursuant to section 10.02.04 of the LDC.
- 32 L. Outfall ditches and open channels. Unless otherwise approved by the County Manager
33 or designee pursuant to section 10.02.04 of the LDC, side slopes no steeper than four to
34 one will be allowed. Protection against scour and erosion will be provided as required by
35 the County Manager or designee.
- 36 M. Roadside swales.
- 37 1. Design. In the interest of preserving the existing natural groundwater levels,
38 roadways will not be designed so as to cause the significant lowering of the water
39 levels existing in the area prior to **development**. Roadside swales and ditches
40 may be permitted within **street rights-of-way** where the use of roadside swales
41 can be justified to the County Manager or designee through a written report
42 prepared by the **applicant's** professional engineer. Swales, where permissible,
43 will have side slopes no steeper than four to one and they will not be utilized to
44 satisfy the stormwater quality (volume) requirements of a project's master water
45 management system. Where flow velocities in excess of four feet per second are
46 anticipated, urban **right-of-way** sections will be required.
- 47 2. Erosion protection. All unpaved areas within the permanent **right-of-way** must
48 be provided with permanent erosion protection, such as **native vegetation** or
49 turf. Swale ditches shall be sodded a lateral distance extending from the road
50 pavement to the top of the swale ditch backslope. Where valley guttered sections
51 are used for drainageways, turf protection must be placed from the edge of the

1 gutter to the outer limits of the **right-of-way**. If seeding is utilized, then mulching
2 in accordance with the Florida Department of Transportation standards will be
3 required. Additionally, if seeding and mulching are utilized, then a strip of sod one
4 foot wide will be placed along the face of the pavement or curb section and over
5 the invert of any approved swale section within the runoff **flowway**. All swales
6 subject to erosion velocities will have adequate erosion protection in the form of
7 riprap or other applicable like methods.

- 8 3. **Driveways** across swale ditches. **Driveways** across permitted swale ditches
9 must have placed beneath them drainage pipes of adequate size and type
10 approved by the County Manager or designee, based on the capacity
11 requirements calculated by the **applicant's** professional engineer for the
12 **development's** master water management system.

13 NM. **Street** drainage. **Street** drainage within the road **right-of-way** through grassed swales
14 will be permitted for rural cross sections only except where velocities in excess of four
15 feet per second are anticipated. The flow from these swales or other types of **drainage**
16 **facilities** will be diverted to natural percolation areas, artificial seepage basins or
17 artificial lakes of at least sufficient capacity to comply with the criteria of Collier County
18 and the South Florida Water Management District. Other equally effective methods of
19 returning cleansed waters to the **aquifer** will be acceptable upon prior review and
20 approval by the County Manager or designee.

- 21 1. Existing natural lakes may be used as detention areas provided that they have
22 adequate storage capacity and that pretreatment measures approved by the
23 County Manager or designee are taken to prevent pollutant matter from entering
24 the lake. Positive outfall **drainage facilities** will be provided away from all
25 percolation areas, seepage basins, detention areas and artificial lakes to handle
26 the runoff from storms which exceed the required design storm event in duration
27 and/or severity.

28 ON. Percolation areas. The actual area required will depend on the percolation rate for the
29 soils at the specific site and the manner in which the site is developed in accordance
30 with Collier County and South Florida Water Management District criteria.

- 31 1. Underground drainage. Where drainage plans provide for, or it is so directed by
32 the County Manager or designee, the collection of stormwater in underground
33 pipes, inlets and other appurtenances for conveyance to an intermediate or
34 ultimate outfall, the following minimum design criteria will be observed:
35 a. The minimum pipe used within a publicly maintained stormwater
36 collection system will be 15 inches in diameter.
37 b. Inlets will be spaced at such intervals and in such a manner to allow for
38 the acceptance of 100 percent of the ten-year, one-hour storm runoff.
39 c. The distance between terminating and intermediate **structures** must not
40 exceed those required by the Florida Department of Transportation,
41 pursuant to Florida Department of Transportation Drainage Manual,
42 Volumes 1—4 (1987 edition or latest revision).
43 d. The stormwater, underground collection system, must be so designed
44 that the elevation of the hydraulic gradient during a ten-year, one-hour
45 storm event is never higher than the crown elevation of any publicly
46 maintained roadway in the system.
47 e. The pipes must be designed to minimize sediment deposits.
48 f. The pipe materials must meet the requirements set forth in sections
49 943—948 inclusive of the current edition of the Florida Department of
50 Transportation Standard Specifications for Road and Bridge Construction.

1 Only concrete pipe or other pipe materials approved by the County
2 Manager or designee may be used in tidal or salt waters.

- 3 g. All drainage pipes must be fitted with headwalls, endwalls, inlets and
4 other appropriate terminating and intermediate **structures**.

5 PO. Stormwater disposal. The method of ultimate disposal of stormwaters will be dependent
6 upon the soil characteristic underlying the **development** or **subdivision**. All stormwaters
7 will be subjected to treatment for the removal of petroleum residues, oils, suspended
8 solids and other pollutants found in stormwater runoff. The method of treatment will be
9 determined by the **applicant's** professional engineer responsible for the preparation of
10 the stormwater management plans and specifications, and will be subject to the approval
11 of the County Manager or designee and the concerned state agencies.

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13
14 **6.05.03 Stormwater Plans for Single-Family Dwelling Units, Two-Family Dwelling Units,**
15 **and Duplexes.**

16 A. Purpose. The purpose of this section is to manage stormwater runoff on **lots** with
17 **single-family dwelling units, two-family dwelling units, or duplexes** in order to
18 prevent detrimental impacts on-site or to **adjacent** properties. This section is also
19 designed to provide criteria for demonstrating compliance with Collier County Code of
20 Laws and Ordinances section 90-41(f)(8). For the purposes of this section, the term
21 **impervious area** shall include roofed **buildings**, concrete and asphalt pads, cool deck
22 (e.g. spraycrete), pavers with limerock base, swimming pools, and lined pond area.
23 Additionally, the term **pervious area** shall include grass, crushed stone (e.g. #57),
24 mulch, pavers without limerock base, and unlined pond area.

25 B. Applicability. A Type I or Type II stormwater plan shall be required for **lots** with **single-**
26 **family dwellings, two-family dwellings, or duplexes** with the following exceptions:

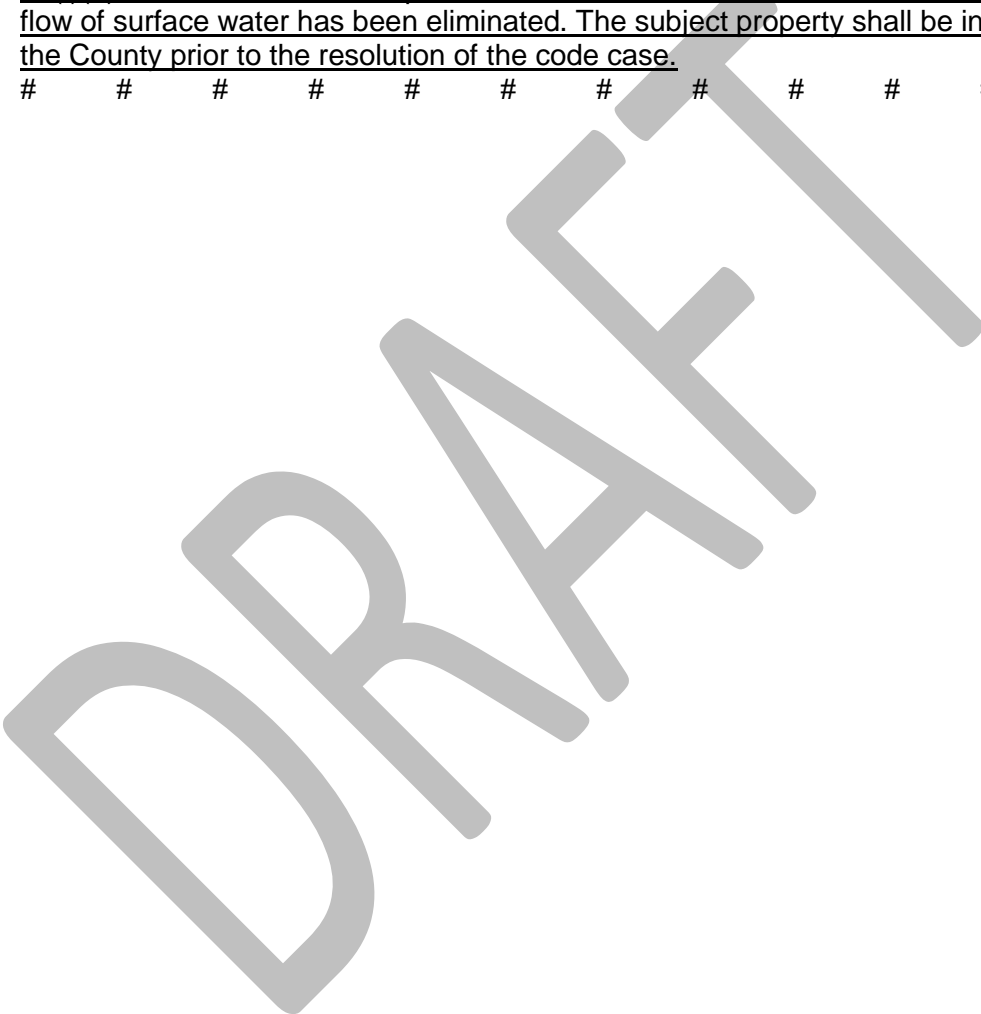
- 27 1. **Lots** located in the Rural Agricultural (A) zoning district outside the Immokalee
28 Urban Area Overlay district and outside the coastal urban designated area as
29 established in the Future Land Use Map.
30 2. **Lots** that have received a Surface Water Management or Environmental
31 Resource Protection permit from the South Florida Water Management District.

32 C. Stormwater plan submittal. A stormwater plan shall be submitted as part of an
33 application for a **building** permit for any of the following:

- 34 1. Type I stormwater plans.
35 a. New **structures**, additions, pools, or decks on **lots** with 40 percent or
36 less **impervious area**, or as described in the following zoning districts:
37 i. **RSF-1 zoned lots** with 30 percent or less **impervious area**.
38 ii. **Rural Agricultural (A) zoned lots** within the Immokalee Urban Area
39 Overlay district or within the coastal urban designated area as
40 established in the Future Land Use Map with 30 percent or less
41 **impervious area**.
42 iii. **Estates zoned lots** with 25 percent or less **impervious area**.
43 b. New **structures**, additions, pools, or decks on **lots** that discharge directly
44 to a tidal waterbody, whether or not the **lot** exceeds the **impervious area**
45 thresholds in LDC section 6.05.03 C.1.a above.
46 2. Type II stormwater plans.
47 a. New **structures**, additions, pools, or decks on **lots** with more than 40
48 percent **impervious area**, or as described in the following zoning
49 districts:
50 i. **RSF-1 zoned lots** with more than 30 percent **impervious area**.

- 1 ii. Rural Agricultural (A) zoned **lots** within the Immokalee Urban Area
2 Overlay district or within the coastal urban designated area as
3 established in the Future Land Use Map with more than 30
4 percent **impervious area**.
5 iii. Estates zoned **lots** with more than 25 percent **impervious area**.
6 b. New **structures**, additions, pools, or decks on **lots** that discharge directly
7 to a non-tidal waterbody, whether or not the **lot** exceeds the **impervious**
8 **area** thresholds in LDC section 6.05.03 C.2.a above.
9 D. Stormwater plan criteria.
10 1. Type I stormwater plan. Type I stormwater plans shall be prepared by a Florida
11 registered design professional, licensed contractor, or owner-builder. The
12 stormwater plan shall demonstrate the following:
13 a. Stormwater runoff. Discharges from the impacted area shall be directed
14 into one or more of the following:
15 i. An existing surface water management system.
16 ii. A drainage conveyance system.
17 iii. On-site retention or detention areas. The bottom of retention or
18 detention areas shall be above the wet season water table.
19 iv. A tidal waterbody. An outfall to a waterbody shall not result in
20 erosion of soil and the discharge area shall be stabilized. For **lots**
21 discharging to a non-tidal waterbody see LDC section 6.05.03 D.2.
22 b. Design standards.
23 i. Retaining walls shall be set back six inches from the property line,
24 if applicable.
25 ii. Stone in french drains shall be calculated with a 40 percent void
26 ratio, if applicable.
27 iii. Stormwater pipes, if used, shall not be metal.
28 iv. Gutters and downspouts shall comply with LDC section 6.05.01 C,
29 if applicable.
30 c. The location, dimension, and **setbacks** of septic systems, if applicable.
31 2. Type II stormwater plan. Type II stormwater plans shall be prepared by a
32 professional engineer licensed in the state of Florida. A Type II stormwater plan
33 shall demonstrate compliance with the Type I stormwater plan criteria above and
34 shall include an engineer's analysis that demonstrates the following:
35 a. Water quantity calculations that demonstrate the ability to accommodate
36 the runoff from the area exceeding the applicable threshold in LDC
37 section 6.05.03 C from a 5-year 1-day storm by a qualified engineer or
38 technician.
39 b. A matrix of all required separation distances between wells, drainfield
40 systems, and stormwater retention/detention areas. The calculations may
41 be done on the site plan or may be in a separate engineer's report, but
42 the site plan must be signed and sealed by a professional engineer
43 licensed in the state of Florida.
44 c. Stormwater discharges to a non-tidal waterbody an outfall to a waterbody
45 shall not result in erosion of soil and will be allowed through a 3-inch
46 orifice and the discharge area shall be stabilized.
47 d. A certification of compliance shall be submitted to the County by the
48 engineer prior to an inspection.
49 E. Application submittal requirements. The Administrative Code shall establish the
50 submittal requirements for stormwater plans.
51 F. Inspection and maintenance.

- 1 1. Inspection. The subject property shall be inspected by the County prior to
- 2 issuance of a certificate of occupancy or certificate of completion, as applicable,
- 3 for consistency with the approved stormwater plan.
- 4 2. Maintenance. The property owner shall maintain site grading and drainage (e.g.
- 5 swales, french drains, grates, etc.) in accordance with the approved stormwater
- 6 plan. Future changes to **impervious area** or site grading shall not modify the site
- 7 in a manner that will prevent continued drainage of the site as shown on the
- 8 approved stormwater plan, whether or not a permit is required for an
- 9 improvement.
- 10 G. Violations. Where a violation of Collier County Code of Laws and Ordinances section 90-
- 11 41(f)(8) occurs, a stormwater plan shall be submitted that demonstrates the additional
- 12 flow of surface water has been eliminated. The subject property shall be inspected by
- 13 the County prior to the resolution of the code case.
- 14 # # # # # # # # # # # #



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4.M. Stormwater Plan

Reference LDC subsection 6.05.03.

Applicability This procedure applies to: 1) single-family dwellings, two-family dwellings, and duplexes that meet the applicability criteria established in LDC section 6.05.03, and 2) violations of Collier County Code of Laws section 90-41(f)(8).

Pre-application A pre-application meeting is not required.

Initiation The **applicant** files a Stormwater Plan with the Planning & Zoning Department in conjunction with the Building Permit application or when required by code enforcement to demonstrate compliance with Collier County Code of Laws section 90-41(f)(8).

Application Contents Submittal Credentials: A type I stormwater plan, as described below, shall be prepared by a Florida registered design professional, licensed contractor, or owner-builder. A type II stormwater plan, as described below, shall be prepared by a Florida licensed engineer. The name and contact information of the person who prepared the drainage plan shall be included on the document.

Type I and Type II stormwater plan applications must include the following:

1. **Applicant contact information.**
2. Property information, including:
 - Address of the subject property;
 - Zoning of the subject property; and
 - Description of the proposed activity.
3. The stormwater plan shall demonstrate the following:
 - Property boundaries;
 - Lot area;
 - Finished floor elevation of the subject property;
 - Elevation of adjacent properties at the property line and representative elevations throughout the impacted area;
 - Location and area of all surfaces that prevent the percolation or absorption of water into the ground on the site;
 - Septic system location, dimensions, and setbacks, if applicable;
 - Location of existing features, such as, watercourses, drainage ditches, lakes, marshes;
 - Proposed drainage directional arrows;
 - Location and type of all drainage infrastructure;
 - Square feet of retention or detention areas, if applicable;
 - Depth of retention or detention areas in inches, if applicable;

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- Cross-sections illustrating proposed grading and drainage infrastructure, including but not limited to: berms, walls, swales, pipes, gutters and downspouts, or other drainage facilities as needed to demonstrate compliance with LDC section 6.05.03; and
- Elevation of the wet season water table in the impacted area if detention or retention is proposed;

Type II stormwater plans must include the following additional information:

- Water quantity calculations required in LDC section 6.05.03 D.2;
 - A matrix of all required separation distances between wells, drainfield systems, and stormwater retention/detention areas. The matrix may be included as a part of the site plan or on a separate engineer's report; and
 - The wet season water table calculations, if applicable.
4. Any additional information related to the subject site, impervious areas, or drainage requested by the County Manager or designee.

Completeness and Processing The Planning & Zoning Department will review the application for completeness. After submission of the completed application packet accompanied with the required fee, the applicant will receive a mailed or electronic response notifying the applicant that the petition is being processed. Accompanying that response will be a receipt for the payment and the tracking number (i.e., XX201200000) assigned to the petition. This petition tracking number should be noted on all future correspondence regarding the petition.

Notice No notice is required.

Public Hearing No public hearing required.

Decision maker The County Manager or designee.

Review Process The stormwater plan will be reviewed by the Planning & Zoning Department as a part of the Building Permit application or a code enforcement case.

Updated