

Item Cover Page

City Council Item Report

Date: August 4, 2026

From: Karmen Pitts, Executive Assistant

Item Type: Ordinance

Subject: Public Hearing and First Reading of an Ordinance Amending Code Section 12-834 Drainage Systems

Presenter: Jason Warrenfeltz, Public Works Director

Recommendation:

It is recommended that City Council approve the first reading of an Ordinance Amending Section 12-834 Drainage Systems, and schedule a public hearing and second reading on August 17, 2026.

Discussion:

The City of Temple Terrace reviews site plans that include stormwater management systems, drainage infrastructure, roadways, and supporting engineering reports. Through the review of numerous site plans and drainage reports, as well as discussions with design engineers, the City identified the need for revisions to the Land Development Code. These revisions are intended to clarify existing requirements and establish additional design standards to provide engineers with more comprehensive guidance for the design and construction of stormwater management systems, including associated pipes, ponds, and roadways. By improving the clarity and consistency of these standards, the updated Code will provide the reasonable assurance necessary to protect public safety, minimize flooding, preserve public infrastructure, and promote compliance with City requirements. Collectively, these revisions establish a best management practice by providing more complete and consistent guidance for the preparation of development design reports.

The amendments to Section 12-834 of the City Code of Ordinances are being proposed:

1. To provide for clarification of standards for drainage systems to ensure adequate stormwater collection, conveyance, and long-term performance within the roadway system;
2. To align Code language with current operational practices to clarify basin mapping and dynamic modeling standards and establish storm sewer design criteria;

3. To strengthen public health, safety, and enforcement authority by requiring minimum roadway to water table separation and specifying the use of a FDOT type II underdrain where applicable.

Upon approval of on first reading, a public hearing and second reading of the ordinance will be held on August 17, 2026.

Resolution/Ordinance Information:

AN ORDINANCE OF THE CITY OF TEMPLE TERRACE, FLORIDA, AMENDING SECTION 12-834 OF THE CITY CODE OF ORDINANCES; PROVIDING FOR CLARIFICATION OF STANDARDS FOR DRAINAGE SYSTEMS; REVISING THE TEXT TO ENSURE ADEQUATE STORMWATER COLLECTION, CONVEYANCE, AND LONG-TERM PERFORMANCE WITHIN THE ROADWAY SYSTEM; STRENGTHENING TECHNICAL SUBMITTAL REQUIREMENTS; CLARIFYING BASIN MAPPING AND DYNAMIC MODELING STANDARDS; ESTABLISHING STORM SEWER DESIGN CRITERIA; REQUIRING MINIMUM ROADWAY-TO WATER TABLE SEPARATION AND SPECIFYING USE OF A FDOT TYPE II UNDERDRAIN WHERE APPLICABLE; PROVIDING FOR SEVERABILITY; PROVIDING FOR CONFLICT; PROVIDING FOR THE CORRECTION OF SCRIVENERS' ERRORS; PROVIDING FOR CODIFICATION; PROVIDING FOR AN EFFECTIVE DATE.

Appropriation Code:

Requirements:

Ordinance

Cost:

Attachments:

1. Ordinance - LDC Sec 12-834R1 v3
2. Exhibit A - Sec 12-834R1
3. Business Impact Estimate - Sec 12-834

ORDINANCE

AN ORDINANCE OF THE CITY OF TEMPLE TERRACE, FLORIDA, AMENDING SECTION 12-834 OF THE CITY CODE OF ORDINANCES; PROVIDING FOR CLARIFICATION OF STANDARDS FOR DRAINAGE SYSTEMS; REVISING THE TEXT TO ENSURE ADEQUATE STORMWATER COLLECTION, CONVEYANCE, AND LONG-TERM PERFORMANCE WITHIN THE ROADWAY SYSTEM; STRENGTHENING TECHNICAL SUBMITTAL REQUIREMENTS; CLARIFYING BASIN MAPPING AND DYNAMIC MODELING STANDARDS; ESTABLISHING STORM SEWER DESIGN CRITERIA; REQUIRING MINIMUM ROADWAY-TO WATER TABLE SEPARATION AND SPECIFYING USE OF A FDOT TYPE II UNDERDRAIN WHERE APPLICABLE; PROVIDING FOR SEVERABILITY; PROVIDING FOR CONFLICT; PROVIDING FOR THE CORRECTION OF SCRIVENERS' ERRORS; PROVIDING FOR CODIFICATION; PROVIDING FOR AN EFFECTIVE DATE.

Whereas, in January 2016, the City of Temple Terrace ("City") adopted its 2040 Comprehensive Plan which requires that changes to the Land Development Code be consistent with state laws and current planning methods for growth and economic development; and

Whereas, on April 13, 2026, the Hillsborough County City-County Planning Commission reviewed the proposed amendments to the Land Development Code for consistency with the City's 2040 Comprehensive Plan and found that the proposed amendments are consistent; and

Whereas, the City Council finds that it is appropriate to update and revise Land Development Code Section 12-834 relating to Drainage systems; and

Whereas, amendments in this proposed ordinance were made to clarify standards for Drainage systems; and

Whereas, the City Council held a public hearing and first reading of the Ordinance at its August 4, 2026 regular meeting, and held a second public hearing and second reading of the Ordinance at its August 17, 2026 regular meeting to consider public comment on the application and Ordinance.

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF TEMPLE TERRACE, FLORIDA THAT:

Section 1. The amendments to the City Code of Ordinances amending Chapter 12, Land Development Code Section 12-834 titled Drainage systems, as attached hereto, are approved and adopted.

Section 2. If any part of this Ordinance is declared invalid by a court of competent jurisdiction, such part or parts shall be severable, and the remaining part or parts hereof shall continue to be in full force and effect.

Section 3. All ordinances or parts of ordinances not specifically in conflict herewith are hereby continued in full force and effect, but all ordinances or parts of ordinances in conflict herewith are hereby repealed.

Section 4. The provisions of this Ordinance may be renumbered or re-lettered to accomplish such intention. The City Clerk is given authority to correct scriveners' errors, such as incorrect Code cross references, grammatical, typographical, misspellings, and similar errors when codifying this Ordinance.

Section 5. The provisions of this ordinance shall become and be made a part of the Temple Terrace Code of Ordinances, and the sections of this ordinance may be renumbered to accomplish this end.

Section 6. That this Ordinance shall become effective immediately upon adoption.

Passed and adopted by the City Council of the City of Temple Terrace, Florida, this 17th day of August 2026.

(Corporate Seal)



X

Andrew Ross, Mayor
Chair of the City Council

Attest:

X

Lynda Sader
City Clerk

Approved As To Form & Content:

X

Ernest Mueller
City Attorney

Deletions are indicated as black strikethrough and additions are indicated in red underline.

Sec. 12-834. Drainage systems.

- (a) *Plan submittal.* The following plans and information, prepared, signed, dated, and sealed by a Florida-registered engineer shall be submitted for the proposed drainage system:
- (1) A designated number of ~~Five (5)~~ sets of drawings (paper and digital PDF), as determined by the City, including:
 - a. A detailed site plan including a general location map and the location of all existing and proposed pavement and structures.
 - b. Construction plans of sufficient detail to indicate compliance with this section and to enable construction with minimal interpretations by a contractor. Data should include existing and proposed conduits, inlets, manholes, pipe sizes and slopes, invert elevations, and retention/detention basins.
 - c. Established drainage areas, acreage and boundaries of proposed drainage areas, and sufficient elevations to delineate said drainage areas.
 - (2) A designated number of ~~Two (2)~~ sets of supplemental data (paper and digital PDF), as determined by the City, including:
 - a. Topographic maps of the site and all adjacent contributing areas before and after the proposed alterations. Pre-development and Post-development basin maps showing the flow path for each time of concentration shall be provided.
 - b. Information regarding the types of soils and groundwater conditions existing on the site.
 - c. General vegetation maps of the site before development and a plan showing the landscaping to be performed as part of the project.
 - d. Design calculations, percolation test results, and seasonal high water determination.
 - e. Separation between roadway subgrade and seasonal high water table, soil infiltration rates and testing data, justification for open basins, floodplain boundaries and FEMA references, safe overflow routing and impacts to adjacent properties, if any.
 - e.f. Additional information necessary for determining compliance with this division as the city engineer may require.
- (b) *Design criteria.* Drainage designs shall be based on the following design criteria unless conditions dictate that such criteria may be modified, or unless more strict requirements are set by other regulatory agencies. Drainage calculations shall be furnished to support proposed drainage features.
- (1) *Water quality.* ~~The drainage system shall provide treatment equivalent to retention, or detention with filtration, or the runoff from the first one inch of rainfall; or as an option for projects with drainage areas less than one hundred (100) acres, the first one-half (½) inch of runoff. Facilities which discharge to Class I waters shall be provided with an approved, workable filter system.~~ Treatment systems shall be designed to meet the stormwater quality treatment criteria specified by the Southwest Florida Water Management District.
 - (2) *Design method.* ~~For drainage areas less than two hundred (200) acres, The drainage system shall be designed by the rational method~~ SCS/NRCS Method (using ICPR unless otherwise approved by the Engineering Department) for modeling areas that have ponds and control structures, except the rational method shall be used for FDOT Storm Drain Tabulations for roadway systems.
 - (3) *Design frequency.* Rainfall data is to be obtained using Florida DOT Zone 6 Rainfall Curves for FDOT Storm Drain Tabulations. For modeling areas that have ponds and control structures, rainfall may be based on SWFWMD charts or NOAA precipitation records. The exception is that for FDOT roadways, FDOT storm data shall be used.

The design frequency shall be:

Facility	Design Frequency
Ditches, cross-drains, storm sewers for external subdivision drainage, <u>detention basins (with an adequate outlet including downstream conditions)</u>	25 year, <u>24-hour rainfall</u>
Ditches, cross-drains, storm sewers within subdivisions	10 year, <u>24-hour rainfall</u>
Retention basins (with no outlet or limited outlet)	100 year, <u>24-hour rainfall</u>
<u>Streets (to be contained within the street or storm sewer)</u>	<u>4 inches/hour rainfall</u>

(4) *Coefficient of runoff* (for the Rational Method used for FDOT Storm Drain Tabulations)

Type Development	Runoff Coefficient
Unimproved areas	0.20
Single-family residential	0.40
Multifamily including apartments	0.60
Commercial	0.90
Paved areas	0.90

(5) *Coefficient of roughness (Manning's coefficient).*

Type	Coefficient
Reinforced concrete pipe	0.012
Concrete box culvert	0.012
Corrugated metal pipe	0.024
Bare earthy ditches	
Maintained	0.03
Not maintained	0.08
Others	To be approved by the city engineer

(6) *Inlets.*

- a. The flow time to the first inlet shall be determined by standard practice, but shall be a minimum of fifteen (15) minutes for storm sewer analysis.
- b. Desirable inlet spacing shall be from four hundred (400) feet to six hundred (600) feet.
- c. Other than at intersections, inlets shall be placed as near as possible to common property line.
- d. Where city standard details are not available, inlets shall conform to state FDOT standards or other appropriate best available standards.

(7) *Manholes.*

- a. Shall be placed at all grade changes and at changes in alignment.
- b. Maximum distance between manholes shall be three hundred (300) feet.
- c. Where city standard details are not available, manholes shall conform to state FDOT standards.
- d. Conflict manholes are not allowed unless provided as part of a design exception. ~~Where it is necessary to allow a sanitary line or other utility to pass through a manhole, inlet or junction box because of no reasonable alternative, the utility shall be ductile iron and shall be located in the upper half of the sewer opening.~~

(8) *Conduits (storm sewers).*

- a. Shall be a minimum of fifteen (15) inches in diameter.
- b. Shall have a minimum velocity of two and one-half (2½) feet per second, and a maximum velocity of ten (10) feet per second.
- c. Minimum clearance between top of pipe bell and bottom of roadway subgrade shall be one-half (½) foot.
- d. Minimum clearance between outside of crossing conduits shall be ~~one-half (½) foot.~~ according to FDEP separation guidance.
- e. Pipe material shall be reinforced concrete, ABS, ~~or corrugated aluminum pipe.~~ or other appropriate pipe material approved by FDOT for the intended purpose, subject to approval by the city engineer.

(9) *Pavement elevation relative to drainage components.*

- a. The bottom of street subgrade shall be at least six (6) inches above seasonal high groundwater elevation. Arterials and collector roadways shall be designed so that the SHGWT is at least three feet below the low edge of pavement.
- b. ~~The low edge of street pavement~~ bottom of the roadway base shall be at least ~~one foot~~ two feet above the seasonal high groundwater table (SHGWT) elevation ~~the applicable design year storm.~~
- c. The low edge of street pavement near a retention and/or detention basin shall be at least one foot above the design high water elevation of said retention and/or detention basin.

(10) *Retention and detention basins.*

- a. Retention basins shall be designed to retain a twenty-four (24) hour, one hundred (100) year frequency rainfall. The post volume of surface discharge shall be less than the pre volume of surface discharge. Outfall capacity conditions shall be described. In a closed basin, where there is no positive outfall, there will be no surface discharge allowed.
- b. Detention basins shall be designed so that the instantaneous peak discharge from the developed site due to a twenty-five (25) year rainfall shall not exceed the instantaneous peak discharge from the undeveloped site due to a (10) ten-year rainfall. Outfall capacity conditions shall be described. For areas where flooding could be expected, the model results shall also include the results for a twenty-four (24) hour, one hundred (100) year frequency rainfall without a downstream increase for the base flood elevation (BFE). Where there is evidence of flooding caused by storms, a higher design standard may be required.
- c. Floodplain compensation must be provided for fill impacts between the SHWT and the BFE, cup-for-cup. This is in addition to the attenuation volume required detention/retention basins. Floodplains must be identified based on the best available information and not limited to FEMA maps.
- ~~d.e.~~ Recovery time for the attenuation volume required for detention/retention basins shall be a maximum of seventy-two (72) hours after the storm event. This is in addition to the storage volume developed for the satisfaction of water quality criteria.
- ~~e.d.~~ An infiltration rate test shall be performed for each one-half (½) acre of basin bottom. The test shall be the Standard Double Ring Infiltration Test or appropriate geotechnical laboratory tests. A safety factor of 2 shall be used in using the infiltration rate so determined.
- ~~f.e.~~ A soil boring shall be taken for each one-half (½) acre of basin bottom, and shall include soil classification and a determination of current water level and seasonal high water table. The soil report shall be included with the drainage calculations.
- ~~g.f.~~ Minimum freeboard for basins shall be one foot between design high water and top of bank.
- ~~h.g.~~ Side slopes of both wet and dry ponds shall be no steeper than four-to-one (4:1) to a point where the depth is two (2) feet below the control elevation. Where these slopes are present, no fencing (or wall) is required. Where slopes are steeper than four-to-one (4:1), the requirements of section 12-1053 shall apply.

- ~~i.h.~~ Retention and/or detention ponds having vertical walls must also be provided with one or more means of ingress and egress for purposes of maintenance and safety. Specific plans for this requirement must be approved by the city engineer.
- ~~j.i.~~ Landscaping and buffering shall be provided as set forth in section 12-1053.
- ~~k.j.~~ Conditions downstream of the outlet control structure shall be such that will enable said outlet control to function as shown on the design calculations.
- ~~l.k.~~ The basin shall be provided with an emergency overflow spillway to control discharge in the event the basin overflows.
- ~~m.l.~~ Inlet-outlet structures shall be designed to prevent silting, erosion and maintenance problems. (Ord. No. 797, 2-4-1992)

(11) *Underdrains.*

- a. Underdrains may be required by the city engineer to facilitate groundwater control during construction and may be left in place. When the use of underdrains is required, the road drainage plans shall include all details necessary to clearly indicate the underdrain construction.
- b. Underdrains are considered to be a permanent control of the groundwater table. The design of the roadway may be based on long-term groundwater level control through the use of underdrains.
- c. A filter fabric envelope shall be used with underdrains and shall be an approved strong, porous nylon, polyester, polypropylene or other fabric approved by the city engineer, which completely covers envelops the underdrain aggregate surface in such a way as to prevent infiltration of surrounding material. The filter envelope shall weigh a minimum of two and one-half (2½) ounces per square yard, shall retain soil particles larger than two hundred twelve (212) microns (no. 70 sieve) and shall pass particles finer than twenty-five (25) microns. When tested in accordance with ASTM D1682, the grab strength (wet) of the filter fabric shall not be less than one hundred (100) pounds and the grab elongation shall not be less than sixty (60) percent. Storage and handling of the filter fabric shall be in accordance with the manufacturer's recommendations. Torn or punctured filter fabric shall not be used. The filter fabric shall not be exposed to sunlight for periods exceeding the manufacturer's recommendations or six (6) weeks, whichever is shorter.
- d. Underdrain pipe shall be of sufficient size (six-inch minimum) to effectively control the flow and sloped at least 0.10 percent. Underdrain pipe shall be concrete, corrugated aluminum, polyvinyl-chloride, corrugated polyethylene or other material approved by the city engineer. ~~Concrete, corrugated aluminum and polyvinyl-chloride~~ Unless otherwise approved, FDOT Type II will be the only underdrain design allowed and shall be in accordance with the state FDOT Standard Specifications for Road and Bridge Construction.

(Code 2001, § 25.745.11; Ord. No. 797, 2-4-1992)

Business Impact Estimate

This form should be included in the agenda packet for the item under which the proposed ordinance is to be considered and must be posted on the City's website by the time notice of the proposed ordinance is published.

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This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes. If one or more boxes are checked below, this means the City of Temple Terrace is of the view that a business impact estimate is not required by state law¹ for the proposed ordinance, but the City of Temple Terrace is, nevertheless, providing this Business Impact Estimate as a courtesy and to avoid any procedural issues that could impact the enactment of the proposed ordinance. This Business Impact Estimate may be revised following its initial posting.

- ☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
- ☐ The proposed ordinance relates to the issuance or refinancing of debt;
- ☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
- ☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
- ☐ The proposed ordinance is an emergency ordinance;
- ☐ The ordinance relates to procurement; or
- ☐ The proposed ordinance is enacted to implement the following:
 - a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
 - b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
 - c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
 - d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

¹ See Section 166.041(4)(c), Florida Statutes.

In accordance with the provisions of controlling law, even notwithstanding the fact that an exemption noted above may apply, the City of Temple Terrace hereby publishes the following information.

1. Summary of the proposed ordinance (must include a statement of the public purpose, such as serving the public health, safety, morals and welfare):

AMENDING SECTION 12-834 OF THE CITY CODE OF ORDINANCES PROVIDES FOR CLARIFICATION OF STANDARDS FOR DRAINAGE SYSTEMS AND IMPROVES PUBLIC HEALTH, SAFETY AND WELFARE.

2. An estimate of the direct economic impact of the proposed ordinance on private, for-profit businesses in the City of Temple Terrace, if any:

AMENDING SECTION 12-834 DOES NOT CAUSE ANY SIGNIFICANT ECONOMIC IMPACT AND MAY IN-FACT REDUCE TIME AND COSTS ASSOCIATED WITH PERMITTING.

3. Good faith estimate of the number of businesses likely to be impacted by the proposed ordinance:

AMENDING SECTION 12-834 IS INTENDED TO IMPACT ALL DRAINAGE RELATED DESIGNS WITHIN THE CITY OF TEMPLE TERRACE.

4. Additional information the governing body deems useful (if any):