

Pender County Planning and Community Development

Planning Division

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MEMORANDUM

To: Pender County Planning Board

From: Planning Staff

Date: August 2, 2016

RE: Upcoming Public Hearing on UDO Section 7.5 Street Design

After months of reviewing various standards and drafting a variety of options, planning staff has teamed with Pender County Emergency Management to generate a draft of updates to the County's regulations on dead end streets and subdivision requirements. This draft is provided to generate conversation regarding the development of dead end streets in the future. Staff from Emergency Management will join this discussion at the August 2, 2016 Planning Board Meeting.

Currently, as written, the Pender County Unified Development Ordinance Section 7.5.1 F specifies:

Permanent dead end streets (cul-de-sacs) or temporary dead end (stub) streets shall be no longer than 1,000 ft. unless it is demonstrated by the developer that the configuration of the property prevents its development without longer streets to provide access to the lots and common area to be subdivided. Temporary dead end or stub streets shall provide turn around capabilities to meet NCDOT requirements. The Cul-de-sac end shall be a bulb type with minimum radii as follows: Curb & Gutter Section: RW = 45', Pavement = 37' to gutter edge, Shoulder Section: RW = 50', Pavement = 35'.

The current language is no longer sufficient in providing guidelines to the development community. At Technical Review Committee meetings and throughout the review process, the Fire Department often comments that more pavement width is necessary to accommodate their needs. One reason for this is that fire equipment is much larger than it used to be. This adds time and expense to the design and review process.

The proposed revisions are an attempt to set one standard that applies to all new development, while also allowing developers several options to suit the landscape. Additionally, language has been added to require more than one ingress and egress point when a subdivision contains more than 30 lots. This is to avoid trapping residents in when an emergency call is in progress.

What is proposed is a result of multiple field exercises. On June 29, 2016 the Fire Department demonstrated entire emergency scenarios. Staff experienced live demonstrations in multiple locations representing different cul de sac sizes. The locations included Avendale (a 30-foot radius cul de sac),

Wyndwater (a 35-foot radius cul de sac) and King's Landing (a 40-foot radius cul de sac). Additionally, a mock emergency was observed at the "Y" turnaround in the Wyndwater residential subdivision. These exercises demonstrated a need to require 80-foot wide cul de sacs in order to accommodate the equipment necessary to respond effectively. They also demonstrated that there is no benefit to requiring a larger cul de sac simply because a street is longer. The setup procedures are the same regardless of the street size.

Discussion is requested on the possibility of making a fire official a signatory on final plats. There is potential in the future to adopt additional standards from Appendix D, which Emergency Services Staff are prepared to explain during discussion. A draft of the ordinance amendments has been attached, as well as photographs from the emergency demonstrations.

Avendale Fire Scene – Typical Response Vehicles and Setup with a 60-foot cul de sac



Wyndwater Fire Scene – Typical Response Vehicles and Setup with a 70-foot cul de sac



Wyndwater Fire Scene –Typical Vehicles and Setup with a Y Intersection



Kings Landing Fire Scene – Typical Setup with a 80-foot cul de sac



7.5 STREET DESIGN

7.5.1 Public and Private Street Design

A. Layout of streets as to arrangement, width, grade, character, and location shall conform to the following:

- 1) Pender County Collector Street Plan, Pender County Transportation Plan or other approved State of Federal Transportation Improvement Plan.
- 2) Adjoining street systems,
- 3) Existing, planned and proposed streets, topographic, drainage and other natural features of the property,
- 4) To provide for continuity in existing streets and proposed streets,
- 5) Provide adequate right-of-way for collector streets,
- 6) Reasonable access will be provided to adjacent properties for development.

B. Spite strips along development boundaries preventing access to streets from adjacent properties are prohibited.

C. Street Alignment – local residential street intersections should be directly aligned if possible.

D. When such intersections cannot be aligned, they shall be offset centerline to centerline by not less than 125 ft. Intersections of Collector streets as defined herein or shown on the Pender County Collector Street Plan, Pender County Transportation Plan or other approved State Transportation Improvement Plan.

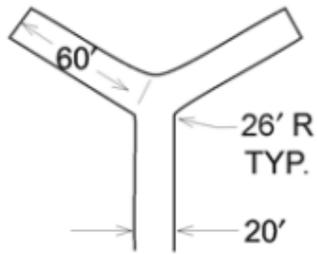
E. Streets should intersect as nearly as possible at right angles.

F. Permanent dead end streets (cul-de-sacs) or temporary dead end (stub) streets shall be no longer than 1,000 ft. unless it is demonstrated by the developer that the configuration of the property prevents its development without longer streets to provide access to the lots and common area to be subdivided.

G. Temporary, dead end, or stub streets **between 150 and 1,000 feet in length** shall provide turn around capabilities to meet **one of the following requirements**: ~~NCDOT requirements. The Cul-de-sac end shall be a bulb type with minimum radii as follows: Curb & Gutter Section: RW = 45', Pavement = 37' to gutter edge, Shoulder Section: RW = 50', Pavement = 35'.~~

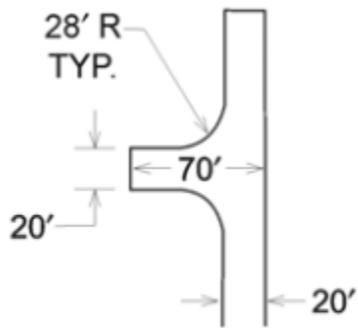
- 1) **A cul de sac with at least 90-feet of right of way including 80-feet of pavement.**
- 2) **A Y intersection (See Figure G1 for specifications)**
- 3) **A T Intersection (See Figure G2 for specifications)**
- 4) **A T/Hammerhead intersection (see Figure G3 for specifications)**

FIGURE G1



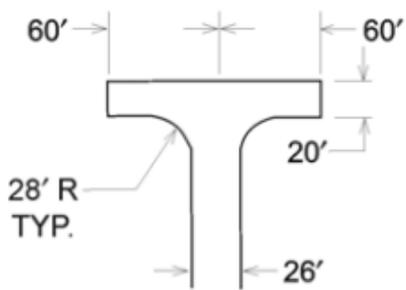
60-FOOT "Y"

FIGURE G2



ACCEPTABLE ALTERNATIVE TO 120-FOOT HAMMERHEAD

FIGURE G3



120-FOOT HAMMERHEAD

H. For new subdivisions exceeding 30 lots, more than one method of ingress and egress must be provided. The turning radius must be approved by the Pender County Fire Marshal or their designee.

6. I. Applicants for subdivision approval shall obtain approval for street names from the Pender County Addressing Coordinator. A copy of the approved preliminary plat with approved street names must be submitted to the Administrator within 30 days of approval of the preliminary plat and prior to final plat submission.

H. J. Sight triangles as required in the NCDOT Secondary Roads Standards shall be provided at all street intersections.