EGR & Associates, Inc.
Engineers and Geologists

Memorandum

To:	Planning Commission	**From:**	Shane J. Hughes
Company:	City of Veneta, Oregon	**Date:**	September 4, 2007
Address:	88184 Eighth Street, PO Box 458, Veneta, OR 97487		

Re:	Review of Proposed Veneta Code Update for Hillside Development

☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply

Purpose

EGR & Associates, Inc. (EGR) is providing written comment on the proposed updates to Section 5.25 of Veneta Land Development Ordinance No. 461 for MacDougal Brothers and ATR Land LLC.

The proposed update to the Land Development Ordinance would require additional planning, design, and building requirements for areas with steep slopes. EGR has reviewed this proposed language specifically for confusing and ambiguous language. Through this review EGR identified other sections that, while they may be clear and objective, result in potential conflicts or conditions that may not be practical. This memo attempts to separate our comments into "confusing" language and "problematic" code sections.

Potentially Ambiguous and Confusing Sections of the Proposed Code

5.25(2) Definitions

Definition of an Engineer

Item (b) which defines a "Civil Engineer" as;

> *"Professional Engineer, registered with the State of Oregon, who by training, education and experience is qualified in the practice of geotechnical or soils engineering practices."*

Item (h) defines a "Geotechnical Engineer" as;

> *Professional Engineer, registered with the State of Oregon as provided by ORS 672.002 to 672.325, who by training, education and experience is qualified in the practice of geotechnical or soils engineering practices.*

The proposed definitions of "Civil Engineer" and "Geotechnical Engineer" are confusing becasue it appears that both titles as they are defined will authorize the same engineering practice. This is potentially confusing because the State of Oregon has defined the practice allowed by professional engineers thus licensed and maintains separate registration requirements and seals for these different areas of expertise. The practice of engineering is defined by ORS 672.005 and 672.007. The qualifications for a geotechnical engineer are defined by OAR 820-040-0040.

These titles are protected by the State and we recommend that any use of the titles should be consistent with State intent and meaning.

Definition of Hillside Area 525(2)(l)

Item (l) defines a "Hillside Area" as;

"Hillside Area" is any property with an average predevelopment slope of 15% or more across the site in any direction. For lands to be divided, the average slope shall be determined for the entire parent parcel.

> *This definition is ambiguous because the proposed code revision does not define how to determine the "average slope", nor is "average slope" contained in the definitions section of the proposed ordinance. The lack of a defining a method would require that an applicant propose a method of determining the average slope of the parcel, which would then be open to debate and challenge during the land use process.*

Without a clean and unambiguous method of calculating this "average slope", it is impossible to predict the impact on any given site that may fall within this description.

5.25(6) Review and Approval (of Geotechnical Reports)

Item (c) of this section states that;

> *Review of submittals shall include examination to ensure that the following criteria are met:*
> *d) Required elements are completed;*
> *e) Geotechnical report procedures and assumptions are generally accepted; and*
> *f) All conclusions and recommendations are supported and reasonable.*

Items (e) and (f) are not clear and objective because they do not define who determines if the report procedures and assumptions are "generally" accepted. This would appear to allow the Planning Commission or City Council to determine that work prepared by a professional was not sufficient. It would seem reasonable that only another qualified professional should be able to determine if the required geotechnical report was sufficient. The proposed requirement for a peer review of the work (item h) suggests a similar conclusion.

Item (h) of this section states;

> *All geotechnical reports shall be reviewed by an engineer with expertise in geotechnical engineering, geological engineering, or a civil engineer with demonstrated experience in hillside development as determined by the City. The cost of review shall be paid by the applicant.*

The proposed code has required that only Geotechnical Engineers or an Engineering Geologist can prepare the required geotechnical report thus it would seem reasonable that only those professionals with similar qualifications should review the reports on behalf of the City. This item reinforces the confusion provided in the definitions. It is a generally accepted practice that Civil Engineers should not be reviewing geotechnical reports.

Specifically as Civil Engineers (State of Oregon definition) one can have extensive experience in designing hillside infrastructure but, having experience designing engineered infrastructure is not

the same as having the experience and background to determine if a site is geologically or geotechnically stable.

5.25(10) Design Standards

The apparent intent of this section is generally clear but does not seem consistent with other requirements of the proposed ordinance. Specifically 5.25(5)(a) requires a site specific geotechnical report that among other things requires a professional to make recommendations for strengths of materials, maximum cut and fill heights, and sub surface drainage requirements. The resulting report will be very detailed for the site and should result in a safe development. However, the design standards proposed in section 5.25(10) are so conservative that if an engineer were to follow the required standards the need for a site specific geotechnical report is questionable.

5.25(10)(a)(1)

1. The maximum area of ground disturbance allowed per lot in steep slope areas shall be as follows:

Slope	***Max area of disturbance per lot***	***Min lot size to allow 4000sqft of disturbance, FYI only***
15%-19.9%	*40%*	*10,000*
20%-24.9%	*30%*	*13,333*
25%-30%	*20%*	*20,000*
>30%	*0%*	*Unbuildable*

Further, and repeating previous comments, this section is ambiguous because it does not define how “slope” is to be measured. For instance: Is this the undefined “average” slope of the parcel, the "average" slope of the area within the grading limits, the "maximum" slope across some unspecified distance or area of the site, or some other slope/area combination?

We recommend that these sections be stricken in favor of professionally prepared and peer reviewed geotechnical reports and recommendations.

5.25(10)(a)(4)

Cut and fill slopes steeper than 4:1 and greater than four (4) feet in height shall be supported with retaining walls. All necessary slope retention devices shall be subject to approval as part of the public improvement plans and installed prior to Final Plat if located on property to be dedicated as public, or prior to Certificate of Occupancy if located elsewhere.

This design requirement is very conservative and would appear to circumvent the purpose of the (also required) site specific geotechnical report. There will be instances where native and engineering excavation and fills will be stable at steeper than 4H:1V slopes without the need for retaining structures. There will be very few instances where a native material would not be stabile at a 4H:1V slope. Further, 4:1 cut and fill slopes constructed as a means of avoiding unnecessary and costly retaining wall construction will unnecessarily expose massive areas of hillside development during construction activities substantially increasing the risk of erosion.

We also point out for the record that retaining walls designed and constructed to minimize cuts and fills associated with street construction present unique problems associated with placement and/or access to other utilities.

We recommend that this section be stricken in favor of professionally prepared and peer reviewed geotechnical reports and recommendations.

5.25(10)(a)(6)

Cut and fill slopes greater than six (6) feet in height shall be terraced. Cut faces on a terraced section shall not exceed a maximum height of four (4) feet. Terrace widths shall be a minimum of three (3) feet to allow for the introduction of vegetation.

This requirement does not define where the height of fill or cut should be measured from, or whether or not the cut and fill dimensions are additive in any given cross section. Specifically when designing streets one could expect a 4-foot fill on one side and a 5-foot cut on the other. The total cut and fill in this example would be 9-feet. It is not clear whether or not this section would require these to be terraced. Are the cuts and fills measured from centerline?, From the edge of the street section? Vertically from one of these points to the catch point? Or to the original ground at that point?

As a minimum, this needs to be clearly defined. We recommend that this section be stricken in favor of professionally prepared and peer reviewed geotechnical reports and recommendations.

5.25(10)(a)(7)

Total height of cut and fill slopes shall not exceed a maximum vertical height of fifteen (15) feet or less as recommended by the geotechnical report.

Again, this requirement does not define where the height of fill or cut should be measured from, or whether or not the cut and fill dimensions are additive. As a minimum, this needs to be clearly defined. We recommend that this section be stricken in favor of professionally prepared and peer reviewed geotechnical reports and recommendations.

5.25(10)(b)(1)(a)

Color selection for new structures shall be coordinated with the predominant colors of the surrounding landscape to minimize contrast between the structure and the natural environment. Earth tone colors and natural materials such as wood, natural brick, slump block walls, tile or earth tone shingles are recommended. Developers shall include such provisions in the CC&Rs for all developments in steep slope areas.

Selection of color to match the natural environment can be extremely subjective and difficult to defend. Neighbors, regulators, and developers can all have differing ideas of what color pallet and architectural features match the specific site. Also, it is not clear to what degree these specific building materials are required for any given structure.We suggest that if this code language remain, that it be clarified to be clear and objective.

5.25(10)(b)(1)(b)

Houses to be located in hillside areas shall utilize special foundation designs such as split-level homes, cantilever foundations, stepped foundations, and other innovative designs to minimize ground disturbance and retain the natural contours of the site.

This section is ambiguous and unnecessary. Section 5.25(10)(a)(1) defines the maximum allowed grading disturbance and would require that the developer/builder choose a foundation system that results in less than a regulated maximum area of disturbance. Additionally, while examples exist, this section 5.25(10)(b)(1)(b) does not define "special" or who determines if the proposed foundation is “special”.

We recommend that this section be stricken in favor of professionally prepared and peer reviewed geotechnical reports and recommendations.

5.25(11) Density Transfer

Our comments related to this section are general in nature because (to reiterate the point), the code language does not propose a method for determine the average slope. The language does not even include any process for developing a procedure that would be approved or recognized by the City. From our experience this will allow the approval authority and anyone else to continually question the veracity of how the average slope was determined. Since the "slope" of the parcel is the foundation for determining applicability of this code section and the degree of development potential any parcel may have, not knowing precisely how average slope is determined creates the potential for much unnecessary conflict.

Problematic Code Sections

5.25(8) Disclosure and Indemnification

The requirements of this section are possible but in our experience potentially problematic. Specifically, the City is requiring that a notice document be recorded at Lane County Deeds and Records specific to the created lots notifying potential buyers of steep slopes and the availability of geotechnical reports.

In our experience these types of notification documents are an excellent idea for both the developer and City. However, on past projects a City approved statement and notification will not always be accepted for recording by Deeds and Records. Our suggestion would be for the City to create a “standard” document that is acceptable to both the City and Deeds and Records that developers could and would be required to use as a template.

5.25(5)(a) Geo-technical Reports

If the City proposes new language for this section someone should review that all of the requirements of the geotechnical report can be prepared by **either** a Geotechnical Engineer or an Engineering Geologist. As the requirements currently exist, there are items that may only be able to be lawfully provided by only one of these professions.