TO: DSG Staff

FROM: Richard Hart, Development Services Director

DATE: April 22, 2005

RE: Downhill Side Measurement - Roof Height in Residential Zones

This administrative policy determination and interpretation is made by the Code Official under Section 19.15.010 C. 5. (a.) of the Mercer Island City Code (MICC) regarding the Residential Development Requirements affecting the number of stories and maximum heights permitted within individual lots within all single family residential zones. Currently all residential structures are limited to height. Questions have been raised about the proper location for the starting point to measure one of the two controlling factors: 35 feet from the downhill side to top plate of top wall supporting the roof for the maximum roof height indicated in MICC 19.02.010 D.

The question arises for proposals that feature a “stepped” building façade and/or stepped roof heights along the face of a steeply sloped site. The overall maximum roof height at the ridge is limited to 30 feet maximum above average building elevation. As an example, a home can be designed with roof ridge (or top of parapet on a flat roof) within the 30 feet maximum roof height measured from average building elevation yet for a site with approximately 33% slope (a site without a designated building pad) a “stepped” approach can be used to meet the downhill side requirement that would result in greater than 35 feet height, if measured from the top of highest wall on the highest floor to the lowest absolute downhill side elevation. There is no maximum limit to the number of stories in the code, yet 2 or 3 stories are typically enabled on most sites, using the building code limitations for the minimum ceiling height for a room and the typical floor and roof dimensions.

The term “average building elevation” is a defined term in the code used as the starting control point for measuring the maximum roof height at the highest point. This term is not at issue in the interpretation.

The location of the “downhill side” of a building is not a defined term in the code yet it implies that there is a specific starting point from which to measure. It is problematic to always know the ground location (a point or a line of points along a wall segment) of where (along a continuous wall or an airline distance) to measure up to the maximum
roof height to top plate of top wall (top wall of subject downhill wall or other wall) along the downhill (a direction that could be parallel to a wall or radial). The many points of ambiguity are the reason for this interpretation.

“Downhill side” as a direction could refer to the entire façade(s) facing downhill as shown in Option #1 or the downhill side could be the side adjacent to the side of the structure where it is measured as shown on Option #2. The two different basic options of measurement point on the ground are illustrated on Attachment “A”.

The selected interpretation relies on the “downhill side” to mean the side adjacent to the edge of the structure where it is measured to the roof limit, as shown in Option #2. The result is that stepped facades are allowed along steep slopes, measured where each story (roof limit) ends in the direction of downhill to the grade 35 feet immediately below.

The findings for the decision are shown as follows:

**Downhill Side for Maximum Roof Height Permitted in the Residential Zone**

The MICC Title 19, MICC, Residential Development Requirements on page 19-14 provides for a maximum roof height based on the distance to the average building elevation, as well as the distance to the downhill side of the structure.

The question of what location to define as the downhill side can be settled by considering the intent of the code – to enable full use of the vertical building envelope, subject to the other more applicable height and bulk limits – setbacks, gross floor area maximum limit, impervious coverage and overall height measured from average building elevation, all with defined terms in the code.

The downhill side as the location on the ground adjacent to the side of the structure where it is measured as shown on Option #2 enables an upper roof height limit of the downhill side to be the same slope as the existing site slope, with 35 feet distance between. This is the preferred interpretation to enable full use of the vertical building envelope otherwise limited or truncated arbitrarily at the downhill side.

The interpretation is analyzed and supported as follows:

**Possible Impact of the Interpretation on Residential Development Size**

Maximum floor size is unaffected, the volume of space may be slightly larger. The location of interior volume enabled is a very minor difference between using Option #1 and Option #2. The Option #2 allows slightly more volume of interior space than Option #1 to allocate within the gross floor area maximum limit. More than extra space (volume), the interpretation provides greater design flexibility for fully using the vertical envelope (projections, architectural features, mezzanines, etc.), subject to the gross floor area limits unaffected by this interpretation.

**Consistency with Adopted Zoning Code**

The defined code key terms for roof height regulation are not in conflict with using Option #2 as the upper roof height limit for the downhill side measurement location:
- Average Building Elevation (MICC 19.16.050 A)
- Building Height (MICC 19.16.050 B)

**Lack of Support for Option #1**
There is no basis in the adopted code for selecting one particular point rather than another point along a given side or a given façade to consistently know where the “downhill side” point of grade (elevation) should be measured. Architectural designs vary (contemporary, traditional, etc.) and existing site gradients vary (cross slopes, benched areas, etc.) on sloped site properties for staff and applicants to always know where the measurement should taken, without an interpretation.

**Support for Option #2**
The absence of a definition for the term “downhill side” in the adopted code does not prevent application of common meaning for the term “downhill” to properly apply. The choice of applying the measurement location continuously along the ground downward from the roof along the slope where it is located outside of the building footprint is consistent with how setbacks and buffers are measured in the horizontal plane (wetlands or watercourses) as well as the vertical plane (critical slopes) from such features regulated under MICC 19.07, where overlap may exist.

**Consistency with Past Reviews**
Staff currently allows stepped building configurations and has done so on past projects, absent a written guidance, consistent with Option #2. This interpretation formalizes current and past practice.

**Consistency with Building Code**
The definition of “story” remains based upon the definition of story listed in the most recent and currently adopted edition of the (2003) International Building Code. Stepped buildings on slopes are not otherwise limited in height within the building code sections for residences.

**Consistency with Comprehensive Plan**
This interpretation is based upon the expressed text of the MICC, the Mercer Island Comprehensive Plan Goal 6.0 with Policy 6.1, page 10 under the Land Use Element, and the intent expressed during the development of the specific Mercer Island Development and Design Guidelines in 1992. During that process substantial public comment and discussion was presented to the Council, at which time the City Council, Planning Commission, Design Commission and citizens expressed concern about preservation of existing neighborhood conditions in the single family zone.

The code under this interpretation does not allow structures greater than 2 or 3 stories within residential areas and the adopted policy will continue under the interpretation. Although certain architectural designs might encompass a greater or lesser number of stories at the range of 2 to 3 floors within the specified maximum height limit based on applicant’s choices for ceiling height and structure dimensions, the Code Official has determined that a proposed residence must satisfy both aspects of the maximum roof
height criteria to set the maximum number of stories based on the maximum roof height for building construction.