# CITY OF GRESHAM

## OVERVIEW

The following design criteria apply only to residential buildings/structures that fall within the scope of the prescriptive design provisions of the *Oregon Residential Specialty Code* (ORSC), which are typically limited one- or two-family dwellings (and their accessory structures) of conventional wood framing, no more than three stories in height. "Prescriptive design" generally refers to design using the tables in the ORSC, as opposed to design by engineering calculations.

The ORSC does not apply to multi-family residential buildings. See the City of Gresham *Commercial Building/Structure Design Criteria* document for multi-family residential buildings and for one- or two-family dwellings that fall outside the scope of the ORSC.

Individual elements of a residential building that is otherwise within the scope of the ORSC may fall outside the scope of the ORSC prescriptive design provisions. Such elements are typically those for which the ORSC does not provide design tables and/or which it specifies shall be "designed in accordance with accepted engineering practice." Typical examples include roof trusses or a ridge beam for a gabled roof with a "vaulted" or "cathedral" ceiling (without ceiling joists or rafter ties conforming to ORSC Section*Oregon Structural Specialty Code* R802.5.2 and Figure R802.4.5). Such elements shall be designed in accordance with the applicable provisions of the (OSSC) and the City of Gresham *Commercial Building/Structure Design Criteria* document, and structural design calculations shall be submitted for permit.

## CURRENT BUILDING CODES

- 2021 Oregon *Residential Specialty Code* (ORSC), based on 2018 *International Residential Code* (IRC)
- 2021 Oregon *Plumbing Specialty Code* (OPSC), based on 2021 *Uniform Plumbing Code* (UPC)
- 2021 Oregon *Electrical Specialty Code* (OESC), based on 2020 NFPA 70, *National Electrical Code* (NEC)

## SNOW LOADS

Design snow loads shall be determined in accordance with Chapter 3 of the ORSC. The minimum Ground Snow Load ($p_g$) shall be 36 psf, per ORSC R301.2.3.1. The following is a clarification (not a modification) of the ORSC.

A *ground* snow load of 36 psf corresponds to the required minimum *roof* snow load of 25 psf. Note that *ground* snow load is used in ORSC tables for framing design, including those for *roof* framing. The online tool referenced in ORSC R301.2.3.1 may indicate a value of ground snow load significantly lower than 36 psf. However, if so, that lower value may *not* be used for prescriptive design per the ORSC, because if ORSC design tables are used with that lower value, the framing will not be correctly designed to support the minimum roof snow load.

Where ORSC design tables are limited to ground snow loads of 30 psf and 50 psf, 50 psf may be used conservatively, or interpolation may be used to determine the required design for 36 psf.

## SEISMIC DESIGN

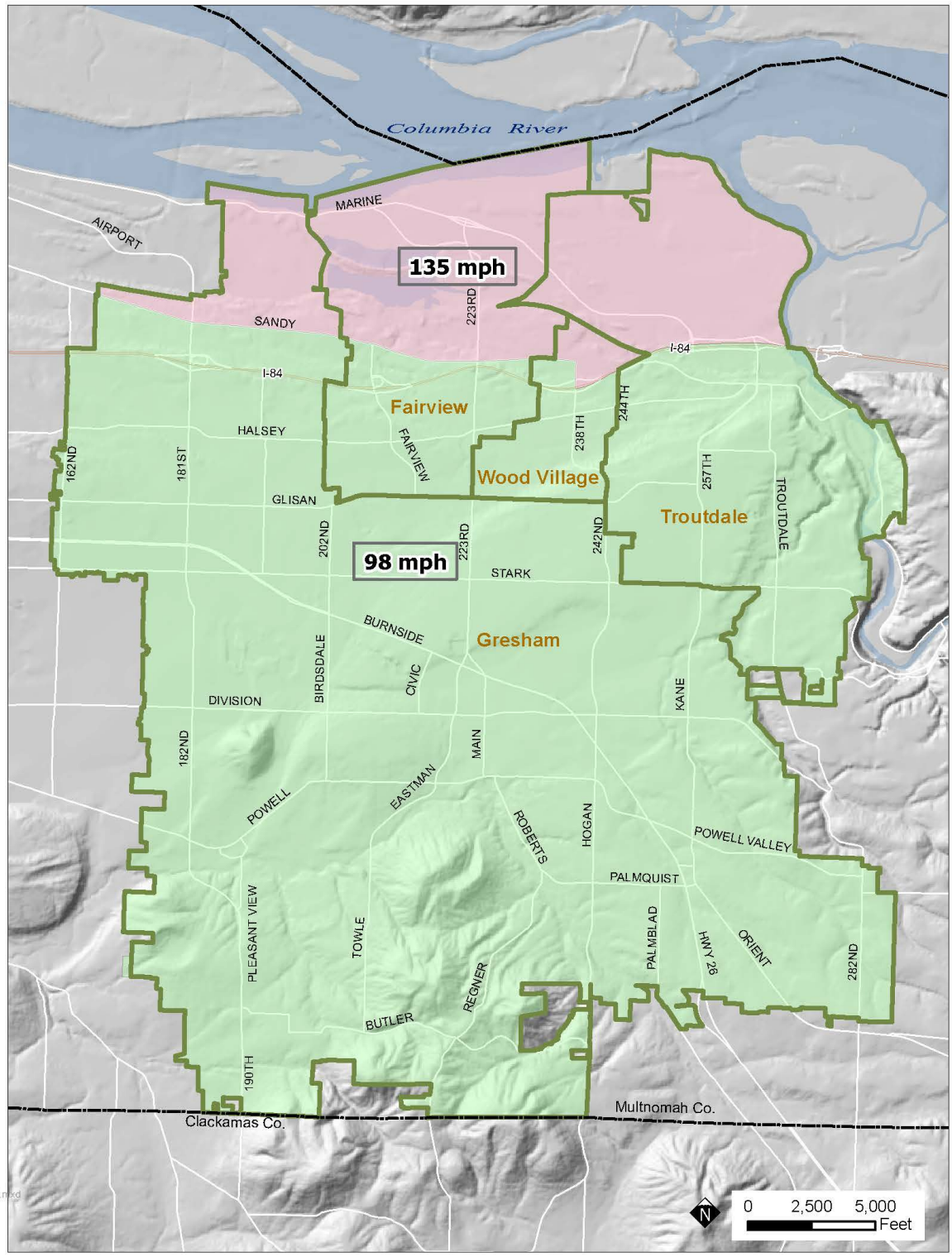
Seismic design criteria shall be determined in accordance with Chapter 3 of the ORSC. Unless geotechnical data indicate otherwise, soil Site Class D shall be assumed. All residential buildings/structures located in the City of Gresham or areas where it has jurisdiction (with soil Site Class D) shall be assigned Seismic Design Category (SDC) $D_1$, unless the applicant submits documentation for permit that the site is in SDC $D_0$. The procedure to determine that a site is in SDC $D_0$ shall be as specified in the notes in ORSC Figure R301.2.2.1 for sites "on the perimeter" of the areas shown in the figure; it may not be determined directly from the figure itself.

## WIND DESIGN

Wind design criteria shall be determined in accordance with Chapter 3 of the ORSC, as modified by this document, including attached Figures 1 and 2. The Basic Design Wind Speed ($V$) shall be per attached Figure 1, and the Exposure Category shall be per attached Figure 2.

# FIGURE 1

## Residential Building/Structure Ultimate Design Wind Speed ($V_{ult}$)

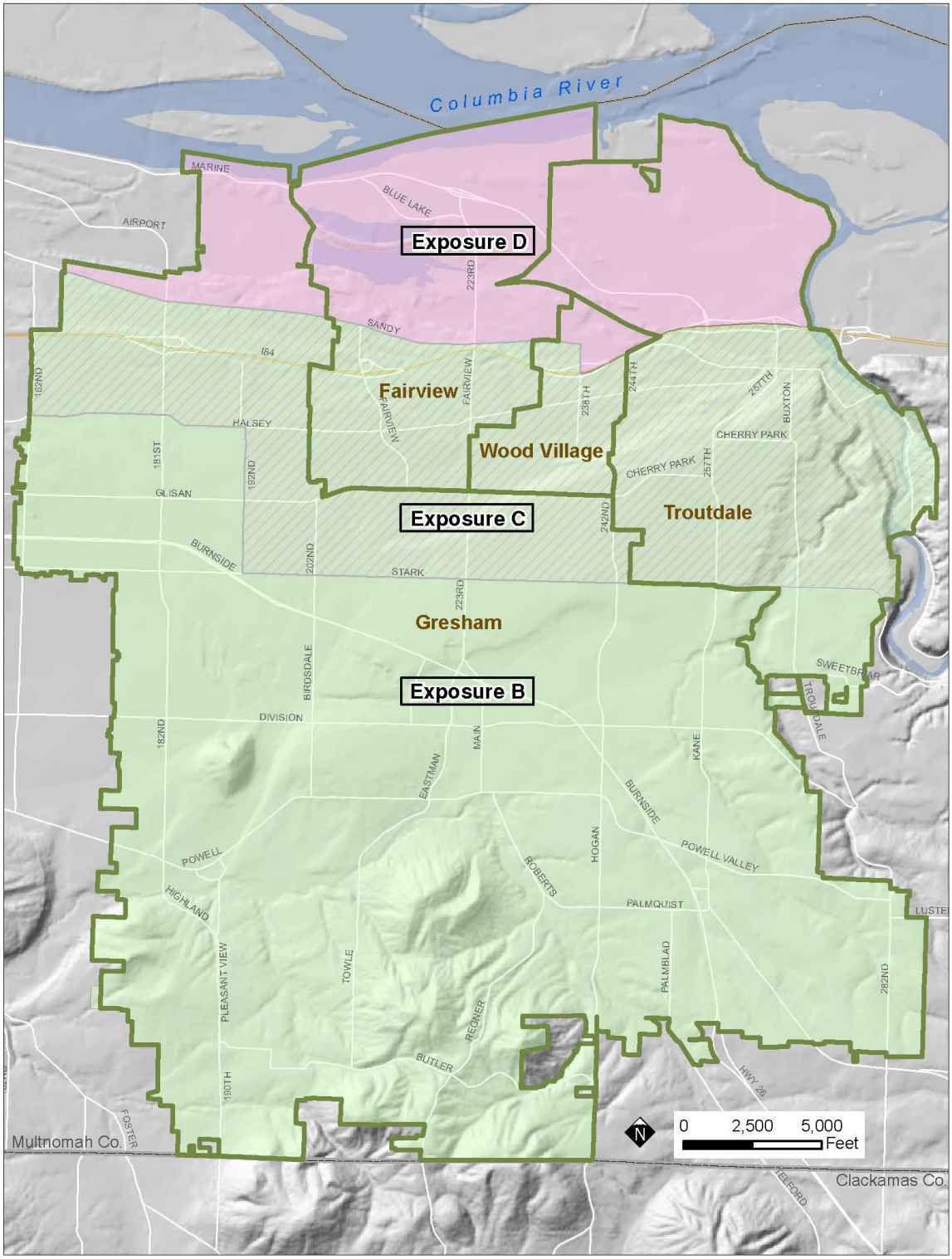



### NOTE:

1. In areas of Multnomah County under the jurisdiction of the City of Gresham without a value shown on this map, unless the applicant submits documentation for permit that the site is not in a Special Wind Region, *V* shall be 120 mph, except where the site has full exposure to Columbia River Gorge winds (Exposure Category D), where it shall be 135 mph. See Figure 2 (Note #2) of this document for determination of Exposure Category.
2. If the applicant submits documentation for permit that the site is not in a Special Wind Region, *V* may be taken as 98 mph, except where the site is in Exposure Category D, where it shall be 135 mph (See Figure 2, Note #2). The procedure to determine that a site is not in a Special Wind Region shall be as specified in footnote "a" of ORSC Figure R301.2.1 for sites "on the perimeter" of the regions shown in the figure; it may not be determined directly from the figure itself.

# FIGURE 2

## Residential Building/Structure Exposure Category

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