



### CITY OF OREGON CITY ENGINEERING GEOTECHNICAL CHECKLIST FOR PUBLIC WORKS CONSTRUCTION

Project No. and Name: \_\_\_\_\_

Date Checklist provided \_\_\_\_\_

Date of City Review #1 for Completeness \_\_\_\_\_

Date of City Review #2 for Completeness \_\_\_\_\_

Date of City Review #3 for Completeness \_\_\_\_\_

#### LEGEND:

X = REQUIRED/PROVIDED/ACCEPTABLE

Blank = MISSING

NA = NOT APPLICABLE

**Disclaimer:** This checklist does not relieve the designer from being responsible to comply and be knowledgeable of all the applicable City standards and codes. This checklist is to be used as a guide, not a replacement for adherence and understanding City Code Chapter 17.44 US Geologic Hazards.

These standards apply for any property proposing any work within the mapped geologic hazards overlay zone or its buffer. The City may, at its discretion, by either the code or using engineering judgment exempt the development from some or all of the requirements.

#### I. GEOTECHNICAL STANDARDS FOR WORK WITHIN A DESIGNATED GEOHAZARD ZONE

*When Required to Obtain a Permit*

City Required	Applicant	City Approval
_____	_____	_____

- \_\_\_\_\_ Installation of construction of an accessory structure greater than 500 square feet in area
- \_\_\_\_\_ Development of land, construction, reconstruction, structural alteration, relocation or enlargement of any building or structure for which permission is required
- \_\_\_\_\_ Tree removal on slopes greater than 25 percent where canopy area removal exceeds 25 percent of the lot
- \_\_\_\_\_ Excavation which exceeds two feet in depth, or which involves 25 or more cubic yards of volume

City Required	Applicant	City Approval
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***EXEMPTIONS (When a Permit or Geotechnical Report is NOT required)***

- — — Excavation (Cut) of less than two feet in depth, or which involves less than 25 cubic yards of volume
- — — Fill of less than two feet in depth, or which involves less than 25 cubic yards of volume
- — — Structural alteration of any structure less than 500 square feet in area that does not involve grading
- — — Installation, construction, reconstruction, or replacement of utility lines in city right of way or public easement, but not including electric substations
- — — Removal or control of noxious vegetation
- — — Emergency actions which must be undertaken immediately to prevent an imminent threat to public health or safety, or prevent imminent danger to public or private property

**II. APPLICATION REQUIREMENTS FOR WORK WITHIN A DESIGNATED GEOHAZARD**

*The following items (to be provided in a bound report) are required to be able to be issued a permit within a geohazard zone from the Engineering Division:*

- — — For all properties equal to or greater than 1.0 acre, a preliminary hydrology report is required in addition to a geotechnical report
- — — For multi-family development or subdivisions equal to or greater than 1.0 acre, groundwater monitoring is required over a minimum of one winter season. This information should be included in the hydrology report.

• Cover Sheet of Geotechnical Report

- — — Planning project number
- — — Geotechnical engineering firm name and contact information
- — — Developer/applicant name and contact information
- — — Professional Engineer Stamp and Signature
- — — Date of Report and/or latest revision date

### III. DEVELOPMENT STANDARDS FOR WORK WITHIN A DESIGNATED GEOHAZARD

*The following items (to be provided in a bound report) are required to be able to be issued a permit within a geohazard zone from the Engineering Division:*

City Required	Applicant	City Approval
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- Proposed Developments must comply with the following:
  - — — Design should avoid unnecessary disturbance of natural topography
  - — — Grading, drainage, or other land disturbances shall only occur from May 1 to October 1 unless an extension is approved by the City Engineer
  - — — Designs shall minimize cut and fill  
\_\_\_\_\_ = cubic yards of cut      \_\_\_\_\_ = cubic yards of fill
  - — — Professional Engineer Stamp and Signature
  - — — Date of Report and/or latest revision date
  
- Density & Disturbance
  - — — For areas with slopes less than 25%, density will be based on zoning code
  - — — For areas with slopes 25%-35% or within a mapped landslide or its buffer the density shall not exceed two dwelling units per acre
    - A. If the entire site is less than ½ acre, only a single dwelling is allowed
    - B. No more than 50% or 4,000 square feet, whichever is smaller, shall be graded or stripped of vegetation and covered with structures or impervious surfaces
    - C. No cut shall exceed a maximum height of 15 feet
  - — — For areas with slopes greater than 35%, no development is allowed, except:
    - \*Roads, Utilities, Public Facilities & Geotechnical Remediation
  - — — \*To the maximum extent practicable, these items should be avoided in slopes greater than 35%
  
- — — Data regarding the nature and distribution of underlying geology
- — — Physical and chemical properties of existing soils and groundwater
- — — Opinion of site geologic stability
- — — Conclusions regarding effect of geologic condition on proposed development

City Required	Information and recommendations regarding existing local drainage
Applicant	Proposed permit activity impacts on local drainage
City Approval	Mitigation to address adverse impacts from local drainage
City Required	Comprehensive information about site topography
Applicant	Opinion as to the adequacy of the proposed development
City Approval	Opinion as to the extent that instability on adjacent properties may adversely affect the project
City Required	Description of field investigation and findings
Applicant	Conclusions regarding the effect of geologic conditions on the proposed development, tree removal, or grading activity
City Approval	Specific requirements or plan modification, corrective grading, and special techniques and systems to facilitate a safe and stable site
<ul style="list-style-type: none"><li>• Plan</li></ul>	
General earthwork considerations, including recommendations for temporary and permanent cut and fill slopes and placement of structural fill	
Amount of cut and fill onsite	
Location of building on lot	
Building setbacks from slopes	
Erosion control techniques applicable to site	
Surface drainage control to mitigate existing and potential geologic hazards	
Subsurface drainage and/or management of groundwater seepage	
Foundations	
Retaining walls	
Management of surface water and irrigation	
Impact of the development on the slope stability of the lot and adjacent Properties	
Natural physical features	
Topography at 2 or 10 foot contours	

City Required	Applicant	City Approval
— — —	Locations of any test excavations or borings	
— — —	Existing or proposed watercourses	
— — —	Trees 6" and larger	
— — —	Cross sections showing the depth, extent and approximate volume of all cuts and fills	
— — —	Cuts and fill slopes greater than 7 feet in height shall be terraced	
— — —	- Faces on a terrace shall not exceed 5 feet	
— — —	- Terraces shall be a minimum of 3 feet in width and shall be Vegetated	
— — —	- Total cut and fill cannot exceed 15 feet in height	
— — —	Cuts shall not remove a toe of slope that contains a known landslide or is greater than 25% in slope	
— — —	Top of cut or fill slope shall be located minimum ½ the height of the cut slope to the nearest property line	
— — —	Structural fill shall be designed by a licensed engineer	
— — —	Private Retaining walls shall be constructed in accordance with Oregon Structural Specialty Code	
— — —	- Engineering design when required by City Public Works	
— — —	Roads shall be the minimum width necessary to provide safe access and minimal cuts and fills	
— — —	For single family development on sites with slopes <u>less than</u> 25%, additional investigation and analysis for cuts or fills greater than four (4) feet will be required which may include but is not limited to slope stability, additional strategic boring logs, groundwater or seismic monitoring, and a pre and post construction analysis showing no difference between the pre and post conditions	
— — —	For single family development on sites with slopes <u>greater than</u> 25%, additional investigation and analysis will be required which may include but is not limited to slope stability, additional strategic boring logs, groundwater or seismic monitoring, and a pre and post construction analysis showing no difference between the pre and post conditions. Items such as deep foundations, lightweight fill, drainage improvements, tie-backs, etc. could be incorporated into the design to meet this requirement.	

City Required	Applicant	City Approval
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- Exhibits

- — — DOGAMI mapping
- — — Applicable Portions of Portland State University study entitled "Environmental Assessment of Newell Creek Canyon" (1992)
- — — Applicable Portions of Portland State University study "Landslides in the Portland, Oregon, Metropolitan Area Resulting from the Storm of February 1996: Inventory Map, Database and Evaluation (1998)"
- — — Applicable Portions of DOGAMI Open File Report O-06-27
- — — Preliminary Geologic Map of Oregon City Quadrangle
- — — Logs of subsurface conditions and laboratory testing results

*Use of this Checklist:*

1. *City of Oregon City Engineering will provide the checklist with the final pre-application notes and will complete the blanks labeled "City Required" These are requirements for a land use submittal and approval (at the stage of Completeness).*
2. *When the applicant provides an application for land use approval, the applicant must also submit this checklist completing the blanks labeled "Applicant"*
3. *City of Oregon City Engineering will use the blanks labeled "City Approval" to determine if an application has met the standards and is complete and permittable (assuming the permit submittal does not deviate from the application, plans, and documents submitted with the land use submittal)*

*Disclaimer:*

1. *Engineering will not deem an application complete until it is found that this checklist has been completely addressed.*
2. *During Permit Review, Civil Engineering Plans will be reviewed to ensure nothing has changed from the information provided in the Complete Land Use Application. If anything has been changed or added, a new review will be provided which could delay the processing of a permit.*
3. *Retaining wall designs may be provided with the permit application, but the designs must follow the recommendations in the geotechnical report and must be approved by the Engineering Division before the Building Division will issue a Permit.*
4. *Earthwork not in geohazard zones follow the Grading Checklists.*