

Seattle Permits

Part of a multi-departmental City of Seattle series on getting a permit

Environmentally Critical Areas: Peat Settlement-Prone Areas

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Peat settlement-prone environmentally critical areas are areas of Seattle that contain substantial deposits of peat-rich soils that are prone to settlement. These areas receive protection under Seattle's Environmentally Critical Areas Ordinance (Seattle Municipal Code 25.09). If you are planning to develop property in a peat settlement-prone area you should consult this Tip to understand how these regulations may affect the maintenance and redevelopment of the property.

Purpose of ECA Regulations

Environmentally Critical Area (ECA) regulations provide protections for areas of Seattle that provide significant habitat and environmental function or that represent geologic hazards. The goal of these regulations is to accommodate reasonable development in the urbanized environment of Seattle while balancing environmental and public safety concerns that arise in these areas.

Peat-rich soils represent a potential geologic hazard as they are highly compressible and are prone to settlement (sinking of the ground surface) when loaded by new structures and fill or when the groundwater table is lowered. Peat is an accumulation of decaying organic plant material that typically forms in wetland environments. In Seattle, these deposits have formed historically in low lying areas such as valleys and the nearshore areas of lakes and their floodplains. As Seattle has developed, these areas were often filled and now support development throughout the city.

Development in areas of peat-rich soils can thus impact existing structures where development modifies the groundwater table through temporary dewatering (e.g. during construction), permanent dewatering (e.g.

basements that require intermittent or continuous pumping), or the addition of new impervious surface that prevents infiltration of stormwater.

The peat settlement-prone ECA designation identifies areas of Seattle where development could have the potential to cause settlement and provides development standards to prevent new development from causing settlement impacts on nearby properties.

ECA Location

SDCI maintains maps of ECAs that are available to the public through the [SDCI website](#). The peat settlement-prone ECA designation is designed to address area-wide impacts of new development. Accordingly, the boundary of these areas will not be modified based on project-specific geotechnical reports.

Peat settlement-prone areas are categorized as Category I or Category II areas. Category I areas represent a higher level of concern and are thus subject to additional development standards.

Development Standards

The development standards for Peat ECAs are contained in Seattle Municipal Code (SMC) 25.09.110.

Subsurface Development

New development below the annual high static groundwater level (see clarification of terms) is prohibited in Peat ECAs except for specific elements detailed in SMC 25.09.110. Connections to a public utility, such as drinking water or sewer, and required structural components, such as shallow foundations or pilings, are specifically exempted. Applicants proposing excavation more than 30 inches in depth will be required to submit a geotechnical report that includes testing to determine the annual high static groundwater table on the site. Requirements for measuring the annual high static groundwater level are detailed in Director's Rule (DR) 14-2008. The intent of this regulation is to prevent the

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construction of basements or other structures that may require permanent groundwater pumping that could result in settlement.

Repair or alteration of an existing structure located below the annual high static groundwater level may be allowed if it does not increase the extent of the structure below the annual high static groundwater level.

Stormwater

In Category I Peat ECAs only, projects proposing new impervious surface must provide an infiltration facility to offset lost infiltration function. In limited circumstances, a soil amendment project may be substituted to meet this requirement. Replaced or reconfigured impervious surface does not have to be offset. Infiltration facilities are stormwater facilities that allow water to percolate into the underlying soil. Infiltration facilities include rain gardens, infiltration trenches, infiltration planters, or porous pavement. Descriptions and requirements for designing infiltration facilities are contained in the Flow Control Technical Requirements Manual available on [SDCI's website](#). Sizing for these facilities to meet the requirements of the ECA code is described in DR 14-2008.

Groundwater

Temporary construction dewatering and land-disturbing activities in Peat ECAs may be limited or restricted to prevent modification of the groundwater regime.

Groundwater collection systems (e.g., footing drains) are also prohibited in Peat ECAs unless otherwise required by law.

Parking, Height, and Floor Area Allowances

Where the high groundwater table makes a full story of underground parking infeasible, parking requirements may be reduced in certain zones to the minimum extent necessary to offset underground parking potential lost due to these ECA regulations. Limited additional height may be granted, floor area dedicated to above-grade parking may be exempt, and certain street-level development standards for parking may be waived for development in commercial zones. These allowances

are detailed in SMC 23.47A.012 (Height), 23.47A.013 (Floor Area Ratio), and SMC 23.48.085 (Parking & Loading).

The determination regarding whether underground parking is infeasible will be based on the geotechnical report which will be required at the time of the Master Use Permit applications.

Other Standards

The Director may waive compliance with some or all of the peat ECA development standards for projects in Category II peat settlement-prone areas if the applicant can demonstrate that the project has been designed to avoid adverse impacts to off-site parcels from peat settlement.

Small project waivers are not allowed in Peat ECAs.

Clarification of Terms

“Annual high static groundwater level” means the highest elevation where the soil is saturated with the main body of groundwater during any part of the year.