King County
Department of Development and Environmental Services
900 Oakesdale Avenue Southwest
Renton, WA 98055-1219

PRELIMINARY CODE INTERPRETATION
L03CI005

Background

By letter dated August 29, 2003, Mr. R. Gerard Lutz, on behalf of the Pacific Northwest Conference of the United Church of Christ and the Samammish Congregational United Church of Christ (the "Church"), requested a code interpretation. The request includes three related issues relating to how porous or pervious concrete is treated in King County development regulations.

The Church requests interpretations of the following:

1. Is pervious concrete an "impervious surface" for purposes of K.C.C. Chapter 9.04 (Surface Water Policy Code) and the Surface Water Design Manual (SWDM);
2. Does pervious concrete satisfy the requirements of K.C.C. Title 17 (Fire Code); and
3. Is pervious concrete an "impervious surface" for purposes of Grand Ridge Joint Agreement.

Items 1 and 3 are related and will be discussed together. The Church comes to the same conclusion in its request. See, *Letter from R. Gerald Lutz to Stephanie Warden*, August 29, 2003, p. 5. ("There is no indication that the Grand Ridge Joint Agreement used the phrase 'impervious surface' to mean something different than it means under the King County Code.")

The Church has an active conditional use permit application (L01CU010) to construct a church on parcel 1324069038.

Discussion

Surface Water Runoff Policy and the Surface Water Drainage Manual

King County's Surface Water Management Code is set forth in K.C.C. Title 9. K.C.C. 9.04.020 defines an impervious surface as

> a hard surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development, and/or a hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roofs,

> walkways, patios, driveways, parking lots, storage areas, areas which are paved, graveled or made of packed or oiled earthen materials or other surfaces which similarly impede the natural infiltration of surface and storm water. Open uncovered flow control or water quality treatment facilities shall not be considered as impervious surfaces.

K.C.C. 9.04.020T.

Under this definition, an "impervious surface" is a hard surface that "prevents or retards the entry of water into the soil mantle" or that "causes water to run off the surface in greater quantities ... from the flow present under natural conditions." Specific examples of impervious surfaces include "walkways, patios, driveways, parking lots, storage areas, areas which are paved, graveled or made of packed or oiled earthen materials …." Also included are "other surfaces which similarly impede the natural infiltration of surface and storm water." The Church suggests that this latter statement modifies the previous list of "common impervious surfaces." Under this interpretation, any surface that does not impede the "natural infiltration of surface and stormwater" is not an impervious surface. Under these circumstances, a roadway or parking lot made with a material, such as pervious concrete, if it does not impede the natural infiltration of surface and stormwater, would not be considered to be an impervious surface.

The sentence structure does not support this interpretation. The sentence begins with a list of "common impervious surfaces" and concludes with the statement that "other surfaces which similarly impede natural infiltration" shall also be classified as impervious surfaces. In other words, the listed surfaces, by definition, are impervious surfaces. It is only surfaces that are not in the list that are classified as impervious based on their infiltration characteristics.

This conclusion is supported by the purpose of K.C.C. Title 9. In adopting the surface water management code, the King County Council stated that its purpose was to

> … preserve[] and utilize[] the many values of the county's natural drainage system including open space, fish and wildlife habitat, recreation, education and urban separation. The council also finds that King County shall conduct programs to reduce flooding, erosion, and sedimentation; prevent and mitigate habitat loss; enhance groundwater recharge; and prevent water quality degradation through the implementation of comprehensive and thorough permit review, construction inspection, enforcement, and maintenance in order to promote the effectiveness of the requirements contained in this chapter.

K.C.C. 9.04.010.

Under the surface water management code, classification of a surface as impervious has at least two purposes. The first is to determine whether a development proposal requires drainage review and the type of review required. The second is the type of facilities that are required to be constructed.

K.C.C. 9.04.030A.1 requires drainage review whenever a proposed development will add more than 5,000 square feet of new impervious surface. Drainage review serves an important role in carrying out the purpose of K.C.C. Title 9 by ensuring that development proposals do not cause the adverse impacts identified in the purpose statement.

The Church suggests that pervious concrete is not an "impervious surface" because it will not prevent or retard the entry of water into the soil mantel. The Church has provided information from Taylor Engineering Consultants supporting this assertion. Taylor Engineering Consultants states that "a pervious pavement detail can be implemented which will meet or exceed the existing soil infiltration rates." This is because the soils at this site "while they do infiltrate, the rate of permeability is not high." Under this rationale, an individualized determination would need to be made for each site to determine whether pervious concrete infiltrated at the same rate as the native soils on the site. This could mean that in one part of the county with highly porous soils, pervious concrete would be considered to be an impervious surface, but in another part of the county with highly impermeable soils, pervious concrete would be considered to be an pervious surface. The definition of "impervious surface" in K.C.C. chapter 9.04 does not support this type of variable site-by-site result.

In conclusion, for purposes of Title 9, pervious concrete is considered an impervious surface. The drainage review process established by Title 9 allows for a site-by-site analysis of what impacts the proposed impervious surface will have on the natural drainage system. In this context, the measures necessary to mitigate for pervious concrete may be different than those that would be necessary for a different type of more impermeable surface.

Grand Ridge Joint Agreement and King County Zoning Code.

King County, the City of Issaquah, and the Grand Ridge Partnership entered into an agreement (3-Party Agreement) dated June 10, 1996. As part of the agreement between the Partnership and the City, standards for development were established for the Northeast Rural Parcel in which the Church's property is located. The agreement limited the maximum amount of impervious surface in the Northeast Rural Parcel to 5.5 percent. 1.5% is allowed for roads, parking, and drives and 4 % for roofs, walks, and patios. The 3-Party agreement does not include a definition of "impervious surface." The 3-Party agreement provided the same impervious surface standards for a 150 acre Southeast Rural Parcel.

The 3-Party Agreement has been amended twice, most recently in 2002. The most recent amendments increased the maximum amount of impervious surface allowed in the Southeast Rural Parcel. Under the amendment, up to 12 acres, or 8 %, of the entire Southeast Rural Parcel may be in impervious surfaces. The amendments were made necessary because the original limits on impervious surfaces did not allow development at the density originally anticipated. In exchange for the increased level of amount of impervious surface, the Partnership provided an additional 40 acres of open space and undertook other measures necessary to address surface water issues.

The definition of impervious surface in the context of the Southeast Rural Parcel has been specifically addressed through a SWDM adjustment. K.C.C. Chapter 9.04 includes provisions allowing adjustments to the standards of the SWDM.

> C. Adjustment.
> 1. An adjustment to the requirements contained in this section and/or other requirements in the Surface Water Design Manual may be proposed provided that the resulting development shall be subject to all of the remaining terms and conditions of this chapter and provided that granting the variance shall:
> a. produce a compensating or comparable result in the public interest, and
> b. meet this chapter's objectives of safety, function, appearance, environmental protection and maintainability based upon sound engineering judgment. …Relief from the specific provisions may be requested under code authority of KCC 9.04.050 C. This is the appropriate process to consider a development proposal where the drainage plan would deviate from the other code standards, yet the resulting development would comply with the goals of the chapter and provisions cited.

KCC 9.04.050.

Adjustment L02V0090, dated February 20, 2003, was requested to determine the maximum impervious area allowed by the development standards and imposed by the 3-Party Agreement. Adjustment L02V0090 grouped pervious pavement products into two major categories. The first category includes pervious and porous concrete and modular grid pavements. These products are characterized by the majority (>90%) of the viewed surface area being solid. The adjustment allowed these surfaces to be modeled as 50% impervious and 50% pervious, in part because these surfaces can become clogged over time and therefore become more impervious. An upper limit was placed on the amount of this type of surface to be used on each lot.

The second category of products included products marketed as Grasscrete, Turfgrid, Grasspave and Geoblock. These products are characterized by the viewed surface to be less than 60% impervious and "looks mostly or all like grass." The adjustment allowed these surfaces to be modeled as 0% impervious and 100% pervious with no upper limit on the amount.

Adjustment L02V0090 concerned the minimum paving and driveway area needed to reach the individual single family dwellings. The Church is proposing a non-residential use that will involve different uses than in a single family residential development. Thus, although Adjustment L02V0090 dealt with similar issues and in the same vicinity as the Church's property, without a separate analysis under a new Adjustment, its analysis can only be illustrative.

In conclusion, for purposes of the Grand Ridge Joint Agreement, pervious concrete is considered an impervious surface. However, if an adjustment is applied for under the provisions of K.C.C. 9.04.050, there is a possibility that the pervious concrete may be modeled as 50 % pervious and 50 % impervious, in the same manner as set forth in SWDM adjustment L02V0090.

In addition to the K.C.C. Title 9 provisions governing impervious surfaces, K.C.C. Title 21A also limits the total amount of impervious surface allowed in different zones. In the rural residential zone, the total impervious surface for a nonresidential use is generally limited to 40 percent. K.C.C. 21A.12.220 A.1. This limit may be modified through the conditional use permit review process. K.C.C. 21A.12.030B.5.d. This allows for site-specific consideration of the applicable level of impervious area as required by zoning.

However, the limit in question is not one imposed by zoning. The 3-Party Agreement is a separate contractual agreement that exceeds the standards required by zoning.

Fire Safety

K.C.C. 17.04.01018 adopts standards for fire department access. That section provides:

> Surface (UFC 902.2.2.2). Fire apparatus access roads shall be designed and maintained to support the imposed loads of 25 tons, or as required by Fire Marshal and shall be provided with a surface so as to provide all-weather driving capabilities which comply with Ordinance 11187, King County Road Standards (Chapter 14).

This provision only requires that roads meet certain load standards and that they provide an all-weather driving surface. Pervious concrete can meet this requirements when properly installed.

Decision

For purposes of K.C.C. Title 9 and the Surface Water Design Manual, "impervious surface" includes pervious concrete and other similar "hard surfaces." If the Church applies for an adjustment under K.C.C. 9.04.050, it may be able to achieve additional flexibility.

For the purposes of the Grand Ridge Joint Agreement and K.C.C. Title 21A, pervious concrete is also considered to be an impervious surface.

Pervious concrete, when properly installed, can meet the standards for fire access roads under K.C.C. 17.04.01018.

Appeal of Preliminary and Final Code Interpretations

This code interpretation relates to conditional use permit application L01CU010. Under the provisions of K.C.C. 2.100.040, this code interpretation is preliminary. A final code interpretation will be issued at the time DDES makes its final decision on application L01CU010.

Under K.C.C. 2.100.050, once a final code interpretation is issued, it is generally not subject to administrative appeal. However, if a code interpretation relates to a development application, the code interpretation is subject to the same administrative appeal provisions that apply to the development permit application. Under K.C.C. 20.20.020 a conditional use permit is a Type II land use decision and is appealable to the Hearing Examiner.

For purposes of appealing this code interpretation, the approval or denial of the conditional use permit application constitutes the final agency decision. As a note, K.C.C. 2.100.040H requires the department to mail a copy of the final code interpretation to the person requesting the interpretation, to the applicant for a permit to which the interpretation is related, and to parties of record on the underlying development permit application.

Stephanie Warden
Director
Development and Environmental Services

Date