



## **City of Bend Stormwater Impervious Surface Coverage Appeals Information and Instruction Sheet**

### **INTRODUCTION AND APPLICABILITY**

The appeals process is open to:

- Single-family and duplex residential stormwater customers/property owners that are being inadvertently billed as commercial or are being billed for a lot that has never been disturbed; and,
- Commercial/industrial/institutional owners (including multi-family residential) stormwater customers/property owners who are being inadvertently billed as single-family residential; and,
- Commercial/industrial/institutional owners (including multi-family residential), who can apply for a reevaluation of their impervious surface coverage calculation if they remove impervious surface from their site or if they believe the City has over-estimated their impervious surface area, including if they are being billed for a lot that has never been disturbed.

The appeals program is mainly for commercial properties, because all single-family residential and duplex properties, no matter their impervious surface coverage unless covered under specific credit programs, should be billed at the minimum 1 ERU (equivalent residential unit) of \$5 per month. However owners of a single-family or duplex residential property that are being billed as a commercial property should complete this form and under “Reason for Appeal” check the box indicating “Incorrect Service Code.”

**Impervious Surface Appeals Versus Credits.** Certain surfaces defined as impervious by the City’s definition (below) and thereby not eligible for this appeal, may nevertheless have characteristics to help reduce the amount of stormwater runoff or to help address water quality that could be considered for a service charge reduction under the City’s stormwater credit program. The City understands that different types of hardscape have different coefficients of runoff. By that we mean that a graveled driveway may shed less stormwater runoff than a concrete driveway. For these instances, the City has developed a separate stormwater credit program that recognizes both water quantity and water quality benefits that a site may have and that can result in up to a 59% reduction in the stormwater service charge for the site. Other credits are available for private management of public stormwater runoff and for demonstration projects among others. For more information on the credit program, please contact the stormwater division at 317-3000 extension 2.

### **BACKGROUND AND DISCUSSION**

Impervious surface coverage is defined by the City of Bend as:

***Impervious surface:*** *A hard surface area that either prevents or retards the entry of*

water into the soil mantle. Common impervious surfaces include: building roofs, walkways, patios, driveways, parking lots, concrete or asphalt paving, gravel roads, and packed earthen materials.

This definition is intended to include all surfaces that impede the natural infiltration of stormwater. These include gravel roads, and compacted soils. This definition does not include landscaped areas.

When the City used the satellite and aerial photo imagery to determine the amount of impervious surface on a property, we included everything that showed up as impervious and met the definition of “impervious surface” given above. For instance, the June 2006 satellite imagery that we used originally included five different wavelengths that allowed us to distinguish impervious from pervious surfaces. Compacted soils or graveled areas that have been used as driveways or parking lots, for example, show up in the imagery and are defined as impervious surface. Storage containers or extended eaves or coverings are considered impervious surface. Periodically we conduct audits of the impervious surface delineations, reviewing recent aerial photographs and manually delineating changes.

**Compacted soils.** Research<sup>1,2</sup> has shown that highly compacted soils, even for sandy or sandy loam soils like we have in Bend, can be nearly as impervious as paved surfaces. In many cases, these compacted surfaces are a serious sediment pollution problem.

Soil compaction can largely be prevented during development or redevelopment or it can be restored after development. The *NAHB'S Model Green Home Building Guidelines*<sup>3</sup> contains several suggestions for preventing compaction. The Natural Resources Conservation Service<sup>4</sup> and Sound Native Plants<sup>5</sup> provide guidance on how to restore compacted soils.

Any soil area where you can demonstrate that the average soil bulk density for the top 6 inches of soils is <1.5 grams/cubic centimeter can be removed from the impervious surface inventory for your site. This bulk density was chosen to ensure appropriate stormwater infiltration and the growth of native vegetation. Bulk density can be reduced and water holding capacity increased by the addition of compost. This is highly recommended. Restoration of compacted surfaces should include re-landscaping, recommended with native plants, and other measures as necessary to prevent erosion. By accepting the appeal, the City maintains the right to periodically inspect restored areas to ensure their continued permeable status and to revoke the appeal determination if not.

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<sup>1</sup> Pitt, et. Al., 2002.

<sup>2</sup> Watershed Protection Techniques, Technical Note #107.

<sup>3</sup> NAHB, 2006.

<sup>4</sup> NRCS, Technical Note No. 2

<sup>5</sup> Sound Native Plants, 2007.

**Disputed Impervious Surface Calculations.** Should you feel that the City erred in determining the amount of impervious surface on site, given the definition above, follow the instructions below and complete the attached form. A City staff person will set up a site visit to verify your calculations and concerns. For more information, see also the “Process” section below.

## **INSTRUCTIONS**

If you believe the City has incorrectly estimated the impervious area on your property, or if you have removed impervious surfaces or restored compacted soil, please measure the area and submit your data to the City using the attached form. If the data is convincing, we will make the appropriate adjustment.

Owners must submit adequate documentation to illustrate the total amount of impervious surface coverage on site after the reduction. Please note when considering this option that the number of Equivalent Residential Units (ERUs), which are based on 3,800 square feet of impervious surface coverage per ERU, are rounded to the nearest whole number when calculating the charge. Therefore a reduction in impervious surface coverage must be large enough to affect the rounded number of ERUs for your site for your service charge to be affected.

**To appeal your impervious surface designation, please complete the attached appeal form, using the detailed instructions below and the City’s definition of impervious surface coverage, provided above under the “BACKGROUND” section. Property owners are responsible for providing adequate supporting information.**

### **Contact Information:**

Please print clearly your name; street, city and zip code under “Mailing Address”, phone number and email address, as appropriate.

### **Service Location:**

- Please include the service street address for the property in question.
- On the second line, include the County tax lot or the City Account number (shown on the bill). Circle which number is being provided. Also, show the total amount of impervious surface noted on the bill. This is noted under the Stormwater section of the bill in units of square feet.
- On the third line indicate the reason for appeal.
  - Should you feel that the original designation made by the City is incorrect, check the first box and include your calculations of the revised total coverage for City consideration. Include copies of any backup drawings/sketches or construction plans to support your calculations. If you have removed impervious surfaces from your site in a manner that the site remains in compliance with City codes and ordinances, check the

second box, provide the square footage of impervious surfaces removed and a description of the location on the site where they were removed. Include copies of any backup drawings/sketches or construction plans to support your calculations. Land owners must remain in compliance with applicable land use requirements, and may need to obtain a land use permit from the City of Bend Planning Division prior to removing any impervious surface from their site. If your site has never been disturbed per the City's impervious surface definition, write in 0 square feet and indicate "completely natural state" under the description of the problem.

- If you have restored compacted soils on the site to make them permeable, check the third box and include the depth of tillage, the amount and type of soil amendments added, the number and type of vegetation planted, and information on any soil infiltration tests performed, along with a description of the location of the restored compacted soils and any other erosion control measures taken. Include copies of any sketches as appropriate.
- If you have a single-family or duplex residential property that has incorrectly been billed Commercial, check the fourth box, indicated whether it is single-family or duplex.
- Provide any additional comments that you feel are important for your appeal, using the back for additional room as necessary. Include a map or drawing of your site to illustrate your case.

## **PROCESS**

Should you have any questions while preparing your application or in general, please call the stormwater utility at (541) 317-3000. Upon preparing your application packet, send the information to:

City of Bend  
Public Works Department  
Attn: Stormwater Utility—Appeals  
62975 Boyd Acres Rd.  
Bend, OR 97701  
Phone: 541-317-3000  
Fax: 541-317-3046  
Or email: [wedde@bendoregon.gov](mailto:wedde@bendoregon.gov) or [dbuchanan@bendoregon.gov](mailto:dbuchanan@bendoregon.gov)

City staff will review your information, and will coordinate with you should a confirmation site visit be necessary. Upon making a determination on the appeal, City Stormwater staff will work with City Finance staff to ensure the corrections are made to the bill. Afterwards, City staff will follow-up with the determination and a formal correspondence letter to the applicant.. Completed appeals packets will have any modifications backdated to the date the completed application was received, and will be refunded as appropriate to that date.

## REFERENCES

Pitt, Robert, P.E.\* Shen-En Chen, P.E.\*\* and Shirley Clark, P.E.\*\*Compacted Urban Soils Effects on Infiltration and Bioretention Stormwater Control Designs Presented at the *9th International Conference on Urban Drainage*. IAHR, IWA, EWRI, and ASCE. Portland, Oregon, September 8-13, 2002.

Center for Watershed Protection, Watershed Protection Techniques, The Compaction of Urban Soils, Article 36 Technical Note #107. 3(2): 661-665, *The Practice for Watershed Protection*, 2000.

National Association of Home Builders, NAHB's Model Green Home Building Guidelines, [www.NAHB.org](http://www.NAHB.org), 2006.

Natural Resource Conservation Service, Soil Quality-Urban Technical Note No. 2, Urban Soil Compaction.

Sound Native Plants—Restoring compacted soil. ([www.soundnativeplants.com](http://www.soundnativeplants.com)), 2007.

Central Oregon Intergovernmental Council, Central Oregon Stormwater Manual, OTAK, May 2007, <http://www.coic.org/stormwater/>