

Upper Bern Township Ordinance Number 131 - 2015

An Ordinance of Upper Bern Township, Berks County, Pennsylvania, amending or adding certain provisions contained as part of Upper Bern Township Ordinance 122-2012, which shall also be referenced as the "Schuylkill River Stormwater Management Ordinance".

Whereas, on November 14, 2012, the Upper Bern Township Board of Supervisors duly adopted the Schuylkill River Stormwater Management Ordinance via Upper Bern Township Ordinance 122-2012.

Whereas, the Upper Bern Township Board of Supervisors have determined that it is necessary to correct Table B-2 (Rational Runoff Coefficients), which is contained within Appendix B (Stormwater Management Design Criteria) of Upper Bern Township Ordinance 122-2012.

Whereas, the Upper Bern Township Board of Supervisors have determined that provisions should be established as part of Appendix H (Design Option for Projects Exempt from Rate Control Design), which shall be a new design option under Upper Bern Township Ordinance 122-2012.

Section 1: Table B-2 contained within Appendix B of Upper Bern Township Ordinance 122-2012 shall be revised and replaced with Attachment 1 (Rational Runoff Coefficients) of this Ordinance.

Section 2: Appendix H shall be established as a new design option as part of Upper Bern Township Ordinance 122-2012, which has been included as Attachment 2 (Design Option for Projects Exempt from Rate Control Design) of this Ordinance.

Section 3: Ratification: All of the remaining provisions of Upper Bern Township Ordinance 122-2012 (Schuylkill River Stormwater Management Ordinance) are hereby ratified and confirmed.

Section 4: Repealer: All Ordinances or Resolutions, or parts of Ordinances or Resolutions, insofar as they are inconsistent herewith, shall be in the same or hereby repealed.

Section 5: Validity: If any Section or part of a Section of this Ordinance shall be declared invalid, such invalidity shall not affect the remaining parts or Sections of this Ordinance. It is hereby declared to be the legislative intent that this Ordinance would have been enacted as if such invalid Section or portion thereof had not been included therein.

Section 6: Effective Date: This Ordinance shall become effective within five (5) days after adoption.

Section 7: Municipal Enactment: Ordained and enacted this 11 day of March, 2015, by a vote of: 2 Yes; 0 No; 0 Abstained; 1 Absent.

Upper Bern Township Board of Supervisors

By: Nancy A. Harlman
Rodney Sol

Attest:

Imyia Ochomer
Upper Bern Township Secretary

TABLE B-2: RATIONAL RUNOFF COEFFICIENTS
By Hydrologic Soils Group and Overland Slope (%)

Land Use	A			B			C			D		
	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+
Cultivated Land	0.08 ^a	0.13	0.16	0.11	0.15	0.21	0.14	0.19	0.26	0.18	0.23	0.31
	0.14 ^b	0.18	0.22	0.16	0.21	0.28	0.20	0.25	0.34	0.24	0.29	0.41
Pasture	0.12	0.20	0.30	0.18	0.28	0.37	0.24	0.34	0.44	0.30	0.40	0.50
	0.15	0.25	0.37	0.23	0.34	0.45	0.30	0.42	0.52	0.37	0.50	0.62
Meadow	0.10	0.16	0.25	0.14	0.22	0.30	0.20	0.28	0.36	0.24	0.30	0.40
	0.14	0.22	0.30	0.20	0.28	0.37	0.26	0.35	0.44	0.30	0.40	0.50
Forest	0.05	0.08	0.11	0.08	0.11	0.14	0.10	0.13	0.16	0.12	0.16	0.20
	0.08	0.11	0.14	0.10	0.14	0.18	0.12	0.16	0.20	0.15	0.20	0.25
Residential Lot Size 1/8 Acre [25% Impervious]	0.30	0.36	0.44	0.33	0.40	0.47	0.38	0.44	0.51	0.40	0.46	0.53
	0.36	0.44	0.51	0.40	0.47	0.55	0.45	0.53	0.60	0.48	0.56	0.64
Lot Size 1/4 Acre [22% Impervious]	0.28	0.34	0.42	0.31	0.38	0.46	0.36	0.42	0.50	0.38	0.44	0.52
	0.33	0.41	0.49	0.38	0.45	0.53	0.43	0.51	0.59	0.46	0.54	0.63
Lot Size 1/3 Acre [19% Impervious]	0.26	0.32	0.40	0.29	0.37	0.44	0.34	0.41	0.48	0.36	0.42	0.51
	0.31	0.38	0.47	0.36	0.43	0.52	0.41	0.49	0.57	0.44	0.52	0.61
Lot Size 1/2 Acre [15% Impervious]	0.23	0.29	0.38	0.26	0.34	0.42	0.31	0.38	0.46	0.34	0.40	0.49
	0.28	0.37	0.44	0.33	0.41	0.49	0.38	0.47	0.55	0.41	0.50	0.60
Lot Size 1 Acre [12% Impervious]	0.21	0.27	0.36	0.24	0.32	0.40	0.30	0.37	0.45	0.32	0.38	0.47
	0.25	0.34	0.42	0.31	0.39	0.48	0.36	0.45	0.54	0.40	0.48	0.58
Industrial [80% Impervious]	0.70	0.73	0.75	0.71	0.74	0.76	0.72	0.75	0.77	0.73	0.75	0.78
	0.79	0.82	0.85	0.80	0.83	0.86	0.82	0.84	0.87	0.82	0.85	0.88
Commercial [85% Impervious]	0.74	0.76	0.78	0.75	0.77	0.79	0.76	0.78	0.80	0.76	0.78	0.80
	0.83	0.86	0.88	0.84	0.86	0.89	0.85	0.87	0.90	0.86	0.88	0.90
Lawn	0.12	0.19	0.29	0.16	0.25	0.34	0.22	0.30	0.39	0.25	0.32	0.42
	0.16	0.26	0.35	0.22	0.31	0.41	0.28	0.38	0.48	0.32	0.42	0.53
Impervious	0.85	0.86	0.87	0.85	0.86	0.87	0.85	0.86	0.87	0.85	0.86	0.87
	0.95	0.96	0.97	0.95	0.96	0.97	0.95	0.96	0.97	0.95	0.96	0.97

^a Runoff coefficients for storm recurrence intervals less than 25 years.

^b Runoff coefficients for storm recurrence intervals of 25 years or more.

APPENDIX H

DESIGN OPTION FOR PROJECTS EXEMPT FROM RATE CONTROL DESIGN

All projects involving the addition of more than 1,000 Sq. Ft. of new impervious surface within the Schuylkill River watershed are required to provide stormwater management facilities addressing the requirements of the Upper Bern Township Stormwater Management Ordinance. Projects creating a limited amount of new impervious surface may be exempted from the requirement to provide complete rate control for the entire array of design storms in accordance with Section 402, but projects qualifying for exemption are still required to provide stormwater management facilities designed to meet the requirements of ordinance Sections 305 (Ground Water Recharge), 306 (Water Quality) and 307 (Stream Bank Erosion). Completion of a site specific design is recommended for each project including soils testing, site grading, evaluation of options appropriate for the site / proposed conditions and designed verification justifying the proposed features. Experience has proven that this approach provides the installation best suited for the site and generally proves to be the most economical.

In lieu of completion of a full design, applicants may elect to consider the following more conservative generic design approach. It must be recognized that facilities resulting from use of this approach are likely based on design assumptions which are more conservative than may be necessary in a site specific design because of the generic nature of this approach. Applicants choosing to employ this generic approach are not required to obtain the services of a licensed design professional; however, strict conformance with the procedures and installation requirements outlined is required. Any variation from this approach requires verification from a qualified design professional.

STEP 1 – PROJECT DATA

Applicant Name _____

Project Address _____

Telephone Number _____

e-Mail Address _____

Project Description _____

STEP 2 – RATE CONTROL EXEMPTION VERIFICATION

Determine the following:

Site Area _____ acres

Proposed New Impervious Surface Area _____ sq. ft.

Next, compare the data listed above to the exemption criteria listed in Table 402-1 below to verify eligibility for exemption. Do this by entering the proper line under Total Parcel Size. Qualification for exemption means that the proposed new Impervious Area entered above is less than the area listed in the middle column of the chart and that the Distance entered above is greater than the distance listed in the table for the corresponding tract area.

**TABLE 402-1
Impervious Area Exemption Criteria**

Total Parcel Size	Impervious Area Exemption (sq.ft.)
0 to <0.125 ac	1,000 sq. ft.
0.125 to <0.5 ac	2,500 sq. ft.
0.5 to <1 ac	5,000 sq. ft.
1 to <2 ac	7,500 sq. ft.
2 to <3 ac	10,000 sq. ft.
3 to <4 ac	12,500 sq. ft.
≥ 4 ac	15,000 sq. ft.

Check one:

- Proposal meets the Exemption Criteria – move to Step 3
- Proposal exceeds Exemption criteria limits – Project not exempt / rate control design required.

STEP 3 – FACILITY DESIGN

The following design is based upon construction of a rock-filled seepage facility with a total depth of 2 feet. A void ratio of 40% is assumed. Accordingly, the required facility surface area is:

$$A = [\frac{\text{_____}}{\text{[IMPERVIOUS AREA FROM ABOVE]}}] \times (0.28) = \text{_____} \text{ sq. ft.}$$

The exact shape of the seepage facility may be determined by the Applicant. For example, if the required area is 100 sq. ft., the Applicant may choose to propose a facility of any size that totals 100 sq. ft. (eg; 5' x 20' or 4' x 25' or 10' x 10')

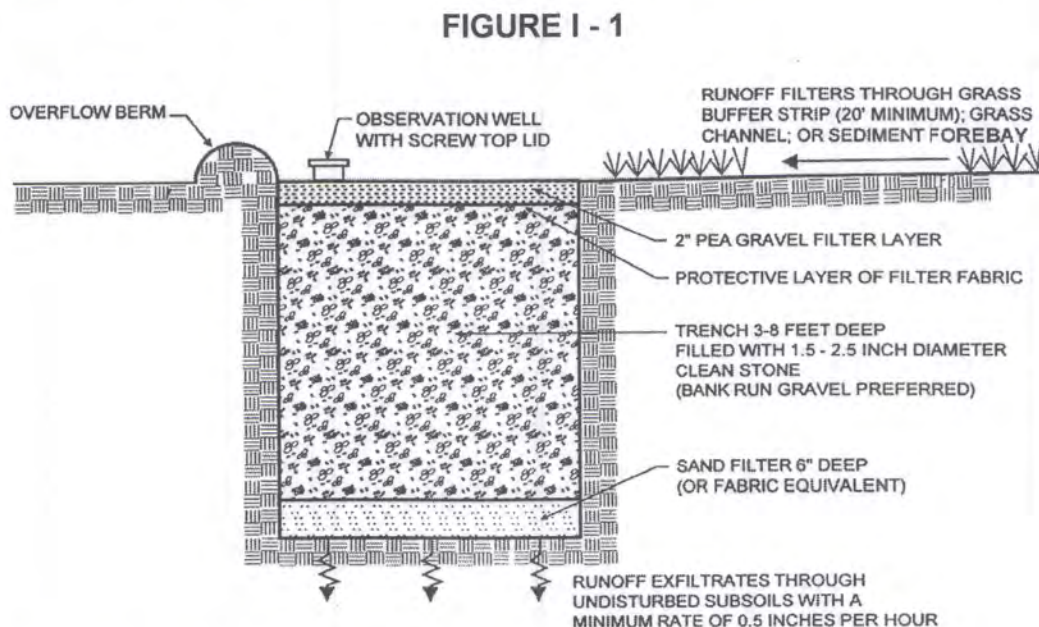
NOTE THAT FOR LARGER NEW IMPERVIOUS AREAS, THE USE OF THIS OPTIONAL PROCEEDURE MAY NOT BE FEASIBLE DUE TO THE RESULTING SIZE AND SURFACE AREA INVOLVED. ACCORDINGLY, FOR LARGER FACILITIES, A PROFESSIONALLY DESIGNED FACILITY IS RECOMMENDED.

The proposed facility must be positioned to receive the entire runoff from the proposed new impervious surface. The Applicant must attach a sketch of the site indicating the following:

- Property lines
- Existing structures / features
- Proposed features
- Location of proposed stormwater facility
- Separation distances from the stormwater facility to buildings, well(s) & septic system(s)
- General indication of slopes

The sketch need not be surveyed but should provide a reasonably accurate representation of the site.

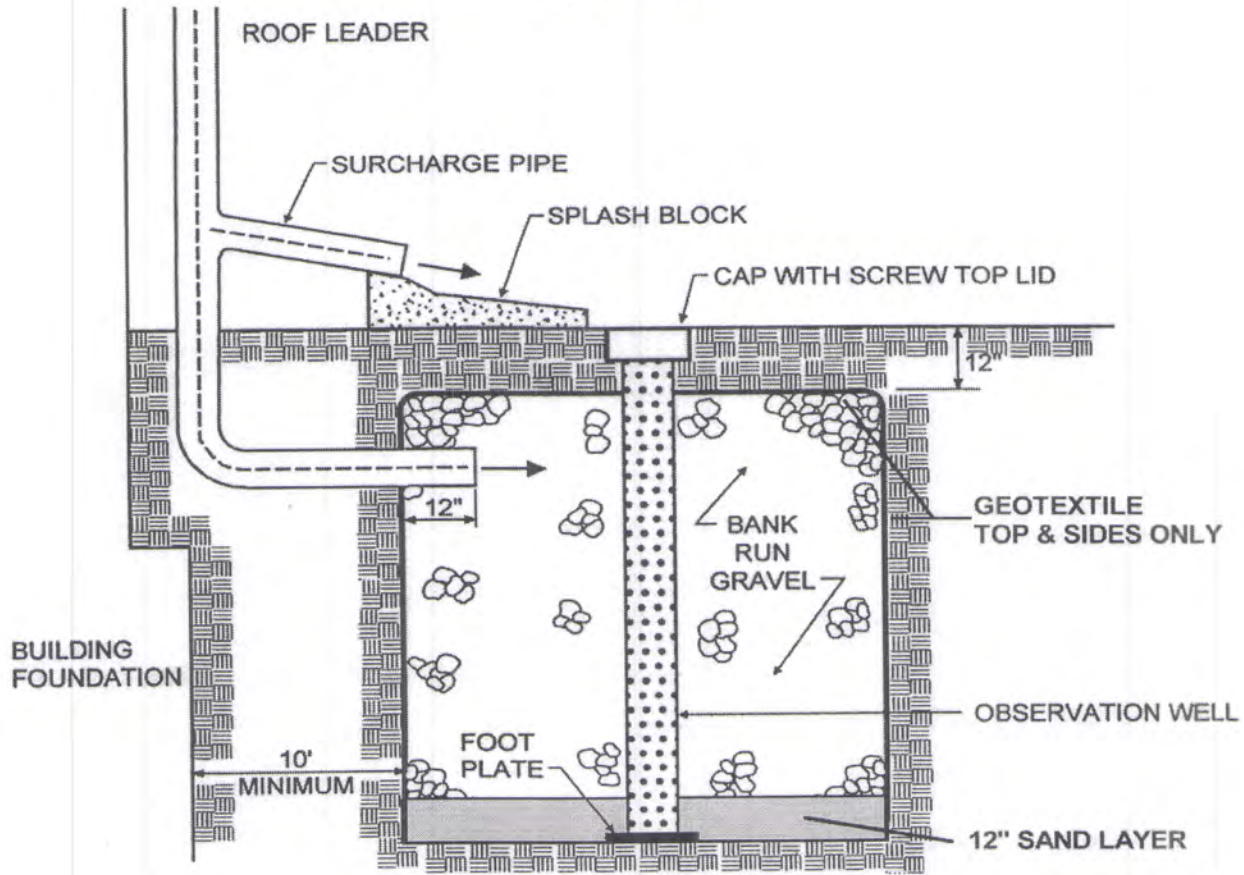
The proposed stormwater facility must be constructed in accordance with Figure I-1 below (Source: Maryland Stormwater Design Manual, 2000)



The facility shown is a surface facility with the seepage basin rock exposed at the surface. As an alternative, the Applicant may complete soils testing to determine the depth of the existing soil limiting zone. If soils information is provided with the

Application, the facility may be modified to provide the equivalent volume and may extend into the ground to within 2 feet of the actual limiting zone. For example, if the limiting zone (rock, mottled soils, water table) is determined to be at 6 feet below grade, the stormwater facility may be modified to extend to 4 feet below grade. This may also allow placement of a facility with the stone bed entirely below grade. If appropriate soils data has been provided in support of a subsurface design, the Applicant may choose to propose a subsurface facility similar to the facility indicated in Figure I-2. (Source: Maryland Stormwater Design Manual, 2000)

FIGURE I-2



STEP 4 - ACKNOWLEDGEMENT

By submitting this form and additional information, I hereby affirm that the information included is true and accurate to the best of my knowledge, information and belief.

(APPLICANT)