

1. General description of project.
 2. General description of permanent stormwater management techniques, including construction specifications of the materials to be used for stormwater management facilities.
 3. Complete hydrologic, hydraulic, and structural computations for all stormwater management facilities.
- B. Map(s) of the project area shall be submitted on 24-inch x 36-inch or 30-inch x 42-inch sheets and shall be prepared in a form that meets the requirements for recording in the offices of the Recorder of Deeds. The contents of the map(s) shall include, but not be limited to:
1. The location of the project relative to highways, municipalities or other identifiable landmarks.
 2. Existing contours at intervals of two feet. In areas of steep slopes (greater than 15 percent), five-foot contour intervals may be used.
 3. Existing streams, lakes, ponds, or other bodies of water within the project area.
 4. Other physical features including flood hazard boundaries, sinkholes, streams, existing drainage courses, areas of natural vegetation to be preserved, and the total extent of the upstream area draining through the site.
 5. The locations of all existing and proposed utilities, sanitary sewers, and water lines within 50 feet of property lines.
 6. An overlay showing soil names and boundaries.
 7. Proposed changes to the land surface and vegetative cover, including the type and amount of impervious area that would be added.
 8. Proposed structures, roads, paved areas, and buildings.
 9. Final contours at intervals of two feet. In areas of steep slopes (greater than 15 percent), five-foot contour intervals may be used.
 10. The name of the development, the name and address of the owner of the property, and the name of the individual or firm preparing the plan.

11. The date of submission.
12. A graphic and written scale of one (1) inch equals no more than fifty (50) feet; for tracts of twenty (20) acres or more, the scale shall be one (1) inch equals no more than one hundred (100) feet.
13. A North arrow.
14. The total tract boundary and size with distances marked to the nearest 0.01 foot and bearings to the nearest degree-minute-second.
15. Existing and proposed land use(s).
16. A key map showing all existing man-made features beyond the property boundary that would be affected by the project.
17. Horizontal and vertical profiles of all open channels, including hydraulic capacity.
18. Overland drainage paths.
19. A twenty-foot wide access easement around all stormwater management facilities that would provide ingress from and egress to a public right-of-way.
20. A note on the plan indicating the location and responsibility for maintenance of stormwater management facilities that would be located off-site. All off-site facilities shall meet the performance standards and design criteria specified in this Ordinance.
21. A construction detail of any improvements made to sinkholes and the location of all notices to be posted, as specified in this Ordinance.
22. A statement, signed by the landowner, acknowledging the stormwater management system to be a permanent fixture that can be altered or removed only after approval of a revised plan by the Plan Administrator.
23. The following signature block for the Plan Administrator:

"I, (Plan Administrator), on this date (date of signature), have reviewed and hereby certify that the Drainage Plan meets all design standards and criteria of the Combined Watersheds Act 167 Stormwater Management Ordinance."

24. The location of all erosion and sedimentation control facilities.

C. Supplemental Information

1. A written description of the following information shall be submitted.
 - a. The overall stormwater management concept for the project.
 - b. Stormwater runoff computations as specified in this Ordinance.
 - c. Stormwater management techniques to be applied both during and after development.
 - d. Expected project time schedule.
2. A soil erosion and sedimentation control plan, including all reviews and approvals, as required by PA DER.
3. A geologic assessment of the effects of runoff on sinkholes as specified in this Ordinance.
4. The effect of the project (in terms of runoff volumes and peak flows) on adjacent properties and on any existing municipal stormwater collection system that may receive runoff from the project site.
5. A Declaration of Adequacy and Highway Occupancy Permit from the PADOT District Office when utilization of a PADOT storm drainage system is proposed.

D. Stormwater Management Facilities

1. All stormwater management facilities must be located on a map and described in detail.
2. When groundwater recharge methods such as seepage pits, beds or trenches are used, the locations of existing and proposed septic tank infiltration areas and wells must be shown.
3. All calculations, assumptions, and criteria used in the design of the stormwater management facilities must be shown.

SECTION 404. PLAN SUBMISSION

For all activities regulated by this Ordinance, the steps below shall be followed for submission. For any activities that require a PA DER Joint Permit Application and are regulated under Chapter 105 (Dam Safety and Waterway Management) or Chapter 106 (Floodplain Management) of PA DER's Rules and Regulations, require a PADOT Highway Occupancy Permit, or require any other permit under applicable state or federal regulations, the permit(s) shall be part of the plan.

1. The Drainage Plan shall be submitted by the Developer as part of the Preliminary Plan submission for the Regulated Activity.
2. Four (4) copies of the Drainage Plan shall be submitted.
3. Distribution of the Drainage Plan will be as follows:
 - a) One (1) copy to the Municipality accompanied by the requisite Municipal Review Fee, as specified in this Ordinance.
 - b) One (1) copy to the Municipal Engineer.
 - c) Two (2) copies to the Plan Administrator accompanied by the requisite Plan Administrator Review Fee as specified in this Ordinance.

SECTION 405. DRAINAGE PLAN REVIEW

- A. The Plan Administrator shall review the Drainage Plan for consistency with the adopted Combined Watersheds Act 167 Stormwater Management Plan. The Plan Administrator shall require receipt of a complete plan, as specified in this Ordinance.
- B. The Municipal Engineer shall review the Drainage Plan for any subdivision or land development against the municipal subdivision and land development ordinance provisions not superseded by this Ordinance.
- C. For activities regulated by this Ordinance, the Plan Administrator shall notify the Municipality in writing, within 90 calendar days, whether the Drainage Plan is consistent with the Stormwater Management Plan. Should the Drainage Plan be determined to be consistent with the Stormwater Management Plan, the Plan Administrator will forward an approval letter to the Municipal Secretary with a copy to the Developer.

Should the Drainage Plan be determined to be inconsistent with the Stormwater Management Plan, the Plan Administrator will forward a disapproval letter to the Municipal Secretary and Developer citing the reason(s) for the disapproval. Any disapproved Drainage Plans may be revised by the Developer and resubmitted consistent with this Ordinance.

- D. For Regulated Activities specified in Sections 104.C and 104.D of this Ordinance, the Plan Administrator shall notify the Municipal Building Permit Officer in writing, within a time frame consistent with the Municipal Building Code, whether the Drainage Plan is consistent with the Stormwater Management Plan and forward a copy of the approval/disapproval letter to the Developer. Any disapproved drainage plan may be revised by the Developer and resubmitted consistent with this Ordinance.
- E. For Regulated Activities requiring a PA DER Joint Permit Application, the Plan Administrator shall notify PA DER whether the Drainage Plan is consistent with the Stormwater Management Plan and forward a copy of the review letter to the Municipality and the Developer. PA DER may consider the Plan Administrator's review comments in determining whether to issue a permit.
- F. The Municipality shall not approve any subdivision or land development for Regulated Activities specified in Sections 104.A and 104.B of this Ordinance if the Drainage Plan has been found to be inconsistent with the Stormwater Management Plan, as determined by the Plan Administrator, or without considering the comments of the Municipal Engineer. All required permits from PA DER must be obtained prior to approval.
- G. The Municipal Building Permit Officer shall not issue a building permit for any Regulated Activity specified in Section 104.C and 104.D of this Ordinance if the Drainage Plan has been found to be inconsistent with the Stormwater Management Plan, as determined by the Plan Administrator, or without considering the comments of the Municipal Engineer. All required permits from PA DER must be obtained prior to issuance of a building permit.
- H. The Developer shall be responsible for completing an "As-Built Survey" of all stormwater management facilities included in the approved Drainage Plan. The As-Built Survey and an explanation of any discrepancies with the design plans shall be submitted to the Plan Administrator for final approval. In no case shall the Plan Administrator approve the As-Built Survey until the Plan Administrator receives a copy of an approved Declaration of Adequacy, Highway Occupancy Permit from the PADOT District Office, and any applicable permits from PA DER.

- I. The Plan Administrator's approval of a Drainage Plan shall be valid for a period not to exceed one (1) year. This one-year time period shall commence on the date that the Plan Administrator signs the approved Drainage Plan. If stormwater management facilities included in the approved Drainage Plan have not been constructed, or if an As-Built Survey of these facilities has not been approved within this one-year time period, then the Plan Administrator may consider the Drainage Plan disapproved and may recommend that the Municipality revoke any and all permits. Drainage Plans that are considered disapproved by the Plan Administrator shall be resubmitted in accordance with Section 407 of this Ordinance.

SECTION 406. MODIFICATION OF PLANS

A modification to a submitted Drainage Plan for a development site that involves a change in stormwater management facilities or techniques, or that involves the relocation or re-design of stormwater management facilities, or that is necessary because soil or other conditions are not as stated on the Drainage Plan (as determined by the Plan Administrator or the Municipal Engineer), shall require a resubmission of the modified Drainage Plan consistent with Section 404 of this Ordinance and be subject to review as specified in Section 405 of this Ordinance.

A modification to an already approved or disapproved Drainage Plan shall be submitted to the Plan Administrator, accompanied by the applicable Plan Administrator Review Fee. A modification to a Drainage Plan for which a formal action has not been taken by the Plan Administrator shall be submitted to the Plan Administrator, accompanied by the applicable Plan Administrator Review Fee.

SECTION 407. RESUBMISSION OF DISAPPROVED DRAINAGE PLANS

A disapproved Drainage Plan may be resubmitted, with the revisions addressing the Plan Administrator's concerns documented in writing, to the Plan Administrator in accordance with Section 404 of this Ordinance and be subject to review as specified in Section 405 of this Ordinance. The applicable Plan Administrator Review Fee must accompany a resubmission of a disapproved Drainage Plan.

ARTICLE V INSPECTIONS

SECTION 501. SCHEDULE OF INSPECTIONS

- A. The Plan Administrator or his assignee shall inspect all phases of the installation

of the permanent stormwater management facilities.

- B. During any stage of the work, if the Plan Administrator determines that the permanent stormwater management facilities are not being installed in accordance with the approved Stormwater Management Plan, the Municipality shall revoke any existing permits until a revised Drainage Plan is submitted and approved, as specified in this Ordinance.

ARTICLE VI
FEES AND EXPENSES

SECTION 601. GENERAL

The fees required by this Ordinance are the Municipal Review Fee and the Plan Administrator Review Fee. The Municipal Review Fee shall be established by the Municipality to defray review costs incurred by the Municipality and the Municipal Engineer. The Plan Administrator Review Fee shall be established by the Plan Administrator to defray the Plan Administrator's review costs. All fees shall be paid by the Applicant.

SECTION 602. PLAN ADMINISTRATOR DRAINAGE PLAN REVIEW FEE

The Plan Administrator shall establish a Review Fee Schedule based on the size of the Regulated Activity and based on the Plan Administrator's costs for reviewing Drainage Plans. The Plan Administrator shall periodically update the Review Fee Schedule to ensure that review costs are adequately reimbursed.

SECTION 603. EXPENSES COVERED BY FEES

The fees required by this Ordinance shall at a minimum cover:

- A. The review of the Drainage Plan by the Plan Administrator and the Municipal Engineer.
- B. The site inspection.
- C. The inspection of stormwater management facilities and drainage improvements during construction.
- D. The final inspection upon completion of the stormwater management facilities and drainage improvements presented in the Drainage Plan.
- E. Any additional work required to enforce any permit provisions regulated by this Ordinance, correct violations, and assure proper completion of stipulated remedial actions.

ARTICLE VII
MAINTENANCE RESPONSIBILITIES

SECTION 701. MAINTENANCE RESPONSIBILITIES

Following final approval of the As-Built Survey by the Plan Administrator, the Developer shall dedicate the permanent stormwater management facilities to the specific entity responsible for the overall maintenance and control of the stormwater management facilities. Any designated entity, other than the Municipality, shall be approved by the local Municipality and the Plan Administrator as an acceptable and duly authorized organization to carry on the responsibilities and obligations of maintenance upkeep and be legally bound by this Ordinance. Such responsible entities shall be set up as a legal organization bound by the laws of the Commonwealth of Pennsylvania and the Municipality. In addition to Municipal ownership, such entities can be Homeowner's Associations, corporations, or direct landowners. The Developer shall post a surety bond corresponding to the present worth of maintenance of the facilities for a ten-year period. The surety shall be based on the estimated annual maintenance cost for the facilities, using a fee schedule provided by the Municipal Engineer or Plan Administrator and adopted by the Municipality.

A Maintenance Plan must be submitted detailing the maintenance operations and specifications that would be required to ensure that the proposed Stormwater Management facilities would operate as designed and described in the submitted Drainage Plan.

**ARTICLE VIII
MISCELLANEOUS**

A. This Ordinance shall be applicable to that portion of Rush Township situated within the Nesquehoning Creek watershed as defined in the Nesquehoning Creek Watershed Stormwater Management Plan of 1994, as amended, which is part of the combined watersheds of Carbon and Schuylkill Counties Stormwater Management Plan of 1994, as amended, which is hereby incorporated by reference as part of this Ordinance.

B. Unless otherwise appointed by the Rush Township Board of Supervisors, the Plan administrator shall be the Code Enforcement Officer of Rush Township who shall develop a fee schedule on a yearly basis which shall be adopted by resolution by the Board of Supervisors.

C. Neither the granting of any approval nor the compliance with the provisions of this Ordinance or with any condition imposed by the municipality, its officials, employees or designated representatives hereunder, shall relieve any person from any responsibility for damage to persons or property resulting therefrom, or as otherwise imposed by law, nor impose any liability upon the municipality, its officials, employees or designated representatives to the maximum extent permitted by law.


D. The granting of any permit which includes any stormwater management requirements shall not constitute a representation, guarantee or warranty of any kind by the municipality, admissible officials, employees or designated representatives thereof, of the practicability or safety of any stormwater structure or facility, use or other plan proposed, and shall create no liability or cause of action upon the municipality, its officials, employees or designated representatives for any damage that may result pursuant thereto to the maximum extent permitted by law.

E. The Township Board of Supervisors reserve the right to appoint a specific engineer or engineering firm to act as the municipal engineer under this Ordinance regardless of whether there is an engineer generally appointed by the Township.

F. This amendment shall become effective at the earliest time permitted by law.

RUSH TOWNSHIP BOARD OF SUPERVISORS

By:



Ronald T. Werner, Chairman

George A. Pinkey
George Pinkey, Vice Chairman
Remo Motroni
Remo Motroni, Supervisor

ATTEST:

Carol Ann Opet
Carol Opet, Secretary

(SEAL)

I hereby certify that the foregoing Ordinance was advertised in the Times News on the 16th day of July, 1996, a newspaper of general circulation in the municipality and was duly enacted and approved and set forth at a duly advertised public meeting of the Rush Township Board of Supervisors held on the 25th day of July, 1996.

Carol Ann Opet
Carol Opet, Secretary
Rush Township Board of Supervisors

APPENDIX B

SAMPLE DESIGN PROCEDURES - USE OF STANDARDS

SAMPLE APPLICATION OF RELEASE RATES WITHIN COMBINED WATERSHEDS

Given: 10 acre tract of abandoned farmland to be converted to 1/4 acre residential lots, with 2 acres of paved roadway. The ground slope is 5 percent and is not to be changed by development. From the Carbon County Soil Survey, the soil is Hazleton channery loam.

Find: What is the maximum rate of discharge that can be released during the 10 year storm?

Solution: Locate the appropriate watershed and subarea for the development (Lizard Creek - Subarea 64). The release rate for LZZ-64 is 95 percent of the predevelopment peak flow for the 10 year storm. The hydrologic soil group from TR-55 is B for Hazleton soils. Time of concentration using TR-55 has been computed to be 60 minutes predevelopment, and 25 minutes postdevelopment. Because the site is 10 acres, the Rational Method is appropriate. For the 10 year storm, C factors according to Table C-2 are ~~are~~

Predevelopment (Meadow, B soil, 5 percent slope, 10 year storm):
 $C = 0.22$

Postdevelopment (B soil, 5 percent slope, 10 year storm):
8 acres 1/4 acre lots: $C = 0.29$
2 acres streets: $C = 0.72$

$$\text{Weighted } C = [8(0.29) + 2(0.72)]/10 = 0.38$$

From Figure C-1, the 10 year storm intensity is:

Predevelopment ($t_c = 60$ minutes): 1.8 iph
Postdevelopment ($t_c = 25$ minutes): 3.1 iph

Peak Flows:

Predevelopment: $Q = CiA = (0.22)(1.8)(10) = 4.0$ cfs
Postdevelopment: $Q = (0.38)(3.1)(10) = 11.8$ cfs

Allowable Release Rate:

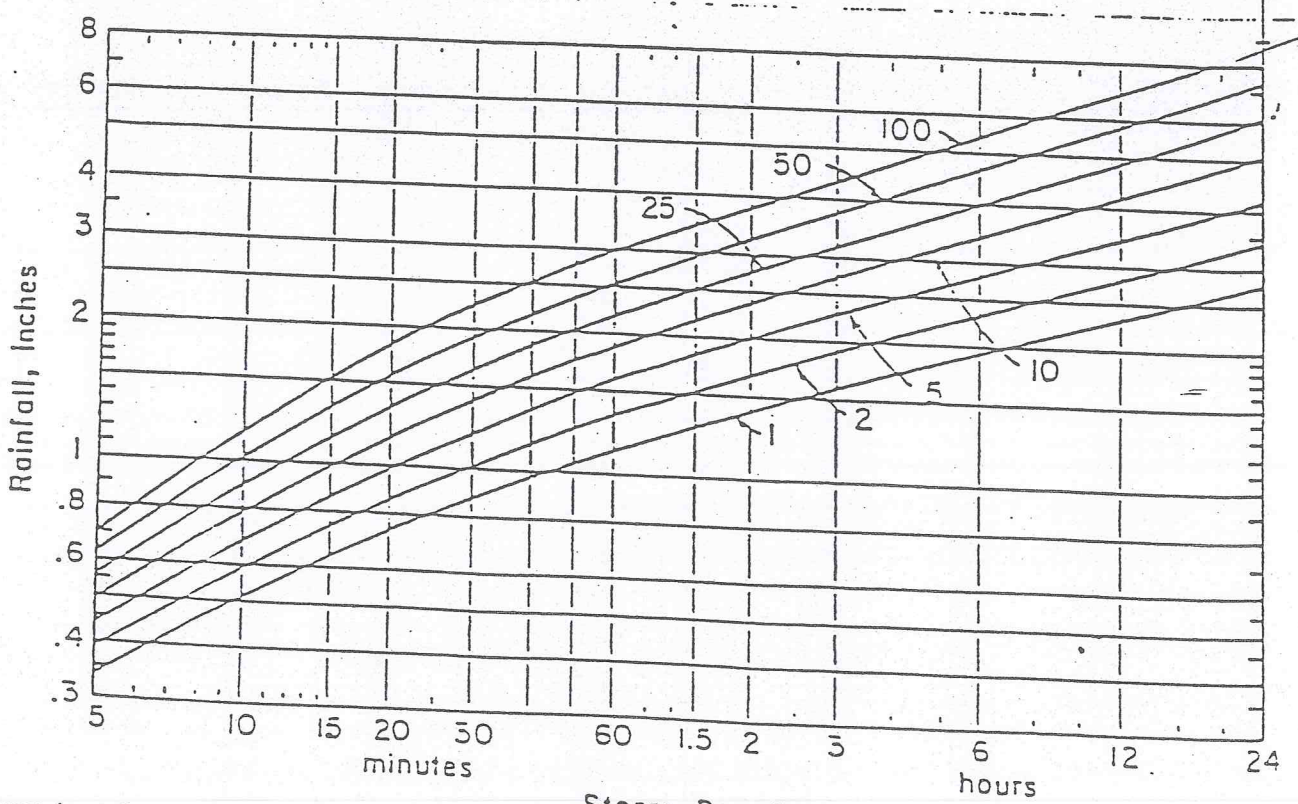
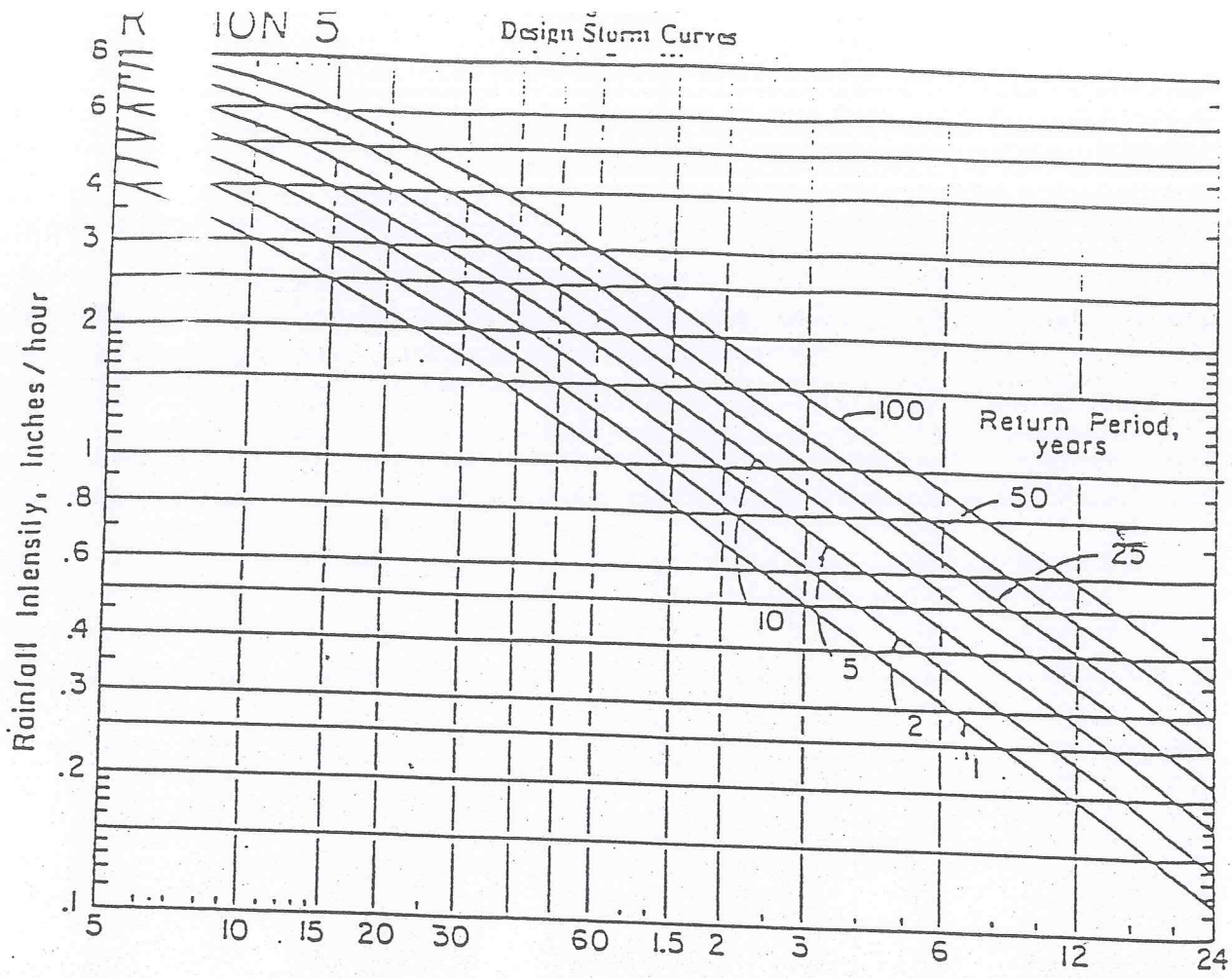
$$95 \text{ percent of predevelopment} = 0.95(4.0) = 3.8 \text{ cfs}$$

This (3.8 cfs) would be the set outflow from the project in post-development.

BUT the release rate in the Plan is for the entire subarea. When developing one tract, consideration may be given to the development of the entire subarea so that the subarea outflow is maintained at 95 percent of predevelopment. This may allow less reduction on this particular tract, if all developed areas when combined with respect to timing effects provide the necessary release rate. A calibrated model with existing and near future development should be used to validate that the release of this tract is consistent with a 95 percent release rate from the entire subarea. A regional facility may be desirable depending on future development planned.

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APPENDIX C
TECHNICAL DATA



Source: Aron, G. et al., 1986, Field Manual of Pennsylvania Department of Transportation Storm Intensity-Duration-Frequency Charts, Department of Civil Engineering and Institute for Research on Land and Water Resources, Pennsylvania State University, University Park, PA.