TOWNSHIP OF ABINGTON

(2) CODE ENFORCEMENT AND LAND DEVELOPMENT COMMITTEE

December 2, 2015
7:00 P.M.

CALL TO ORDER

ROLL CALL: **SANCHEZ – MARKMAN – DiPLACIDO – MYERS GILLESPIE**

Township Manager LEFEVRE
Assistant Township Manager WEHMEYER
Township Solicitor CLARKE
Director of Code Enforcement MATTEO
Township Engineer POWERS

MINUTES:

Motion to approve the minutes of the October 28, 2015 Code Enforcement and Land Development Committee Meeting

CE1. ***Subdivision SD-15-04 – Gordon B. & Christina M. Cox – 1544 Cloverly Lane***

Motion to approve the subdivision application of Gordon B. & Christina M. Cox, owners of the property located at 1544 Cloverly Lane. The applicants propose to subdivide the 2.98 acre site into two parcels. Lot No. 1 is shown to contain the existing single-family dwelling on a parcel of 1.98 acres in size. Lot No. 2 is not proposed to be developed at this time and is shown at 1 acre in lot size. Both lots will comply with the dimensional requirements of Section 301.3 of the Zoning Ordinance. The properties are zoned in the (R-1) Residential District in Ward No. 1 of the Township of Abington.

This motion is subject to the following conditions:

1. **The applicant is required to provide the Township with two (2) new, executed (signed, notarized and recorded) deeds. This is a requirement of the subdivision process. The Township Engineer will not sign the plans without the required deeds.**

2. **The items listed in the Staff Review letter dated, October 29, 2015 become a condition of this application.**

3. **The Planning Commission recommends that the developer use extreme care in development of this property to ensure a minimal disturbance of the existing tree growth and steep slope on this property.**

This motion is subject to the following waivers:

1. **Waiver from Section 146-11.A – Property Identification Plan**
2. **Waiver from Section 146-11.B – Existing Features Plan**
3. **Waiver from Section 146-11.C – Proposed Layout Plan**
4. **Waiver from Section 146-11.E – Soil Erosion Controls**
5. **Waiver from Section 146-11.1 – Phasing Plan**
6. **Waiver from Section 146-11.L – Architectural Plan**
7. **Waiver from Section 146-24.D – Right-of-Way Width**
8. **Waiver from Section 146-27 – Sidewalks and Curbing**
9. **Waiver from Section 146-30 – Lots**
10. **Waiver from Section 146-38- Street Lighting**

CE2. ***Ordinance No. 2100 – Stormwater Management Ordinance – Tookany/Tacony-Frankford Watershed Stormwater Management Plan***

Motion to advertise a Public Hearing to be held on Thursday, January 14, 2016 at 7:30 p.m. on Ordinance No. 2100, entitled Stormwater Management Ordinance.

CE3. ***Ordinance No. 2102 – An Ordinance Amending Chapter 162 – "Zoning" Section 2102 – Flood Plain Conservation Overlay District***

Motion to advertise a Public Hearing to be held on Thursday, January 14, 2016 at 7:30 p.m. on Ordinance No. 2102, "The Flood Plain Ordinance."

Code Enforcement & Land Development
BOARD ACTION REQUEST

DECEMBER 2, 2015
~~November 30, 2015~~

CE 1
Agenda Item

CODE ENFORCEMENT

TOWNSHIP MANAGER

AGENDA ITEM
Subdivision SD-15-04
Gordon B. & Christina M. Cox
1544 Cloverly Lane

PREVIOUS ACTION:

- Abington Township Planning Commission approved this application with the requested waivers on November 18, 2015.
- Montgomery County Planning Commission approved this application on November 18, 2015.

RECOMMENDED BOARD ACTION:

Motion to approve the subdivision application of Gordon B. & Christina M. Cox, owners of the property located at 1544 Cloverly Lane. The applicants propose to subdivide the 2.98 acre site into two parcels. Lot No. 1 is shown to contain the existing single-family dwelling on a parcel of 1.98 acres in size. Lot No. 2 is not proposed to be developed at this time and is shown at 1 acre in lot size. Both lots will comply with the dimensional requirements of Section 301.3 of the Zoning Ordinance. The properties are zoned in the (R-1) Residential District in Ward No. 1 of the Township of Abington.

This motion is subject to the following conditions:

1. The applicant is required to provide the Township with two (2) new, executed (signed, notarized and recorded) deeds. This is a requirement of the subdivision process. The Township Engineer will not sign the plans without the required deeds.
2. The items listed in the Staff Review letter dated, October 29, 2015 become a condition of this application.
3. The Planning Commission recommends that the developer use extreme care in development of this property to ensure a minimal disturbance of the existing tree growth and steep slope on this property.

This motion is subject to the following waivers:

1. Waiver from Section 146-11.A – Property Identification Plan
2. Waiver from Section 146-11.B – Existing Features Plan
3. Waiver from Section 146-11.C – Proposed Layout Plan
4. Waiver from Section 146-11.E – Soil Erosion Controls
5. Waiver from Section 146-11.I – Phasing Plan
6. Waiver from Section 146-11.L – Architectural Plan
7. Waiver from Section 146-24.D – Right-of-Way Width
8. Waiver from Section 146-27 – Sidewalks and Curbing
9. Waiver from Section 146-30 – Lots
10. Waiver from Section 146-38 – Street Lighting

COMMENTS:

Wayne C. Luker, President
Steven N. Kline, Vice President
Michael LeFevre, Manager
Jay W. Blumenthal, Treasurer

1176 Old York Road Abington PA 19001-3713 Telephone: 267-536-1000

Nicholas T. Rose, P.E.
ProTract Engineering, Inc.
Post Office Box 58
Hatboro, Pa. 19040

October 29, 2015

Re: Staff Review Comments on Application SD-15-04 for the property located at 1544 Cloverly Lane, Rydal, Pa. 19046.

Dear Mr. Rose,

This letter is written to inform you that the staff of the Township of Abington has reviewed the application and the plans submitted for the proposed subdivision of 1544 Cloverly Lane, Rydal, Pa. 19046. The plan proposes to subdivide the 2.984 acre property into two lots. Lot #1 will contain the existing single family dwelling on a lot of 1.98 acres in size Lot #2 is proposed at 1.00 acre is size with frontage on both Cloverly Lane and Rydal Road. Lot #2 is shown with a building envelope and is not proposed to be developed at this time. This application was reviewed as a preliminary as a final minor subdivision application. Several of the conditions listed below are building permit related and will be clearly marked within this letter with a (BP). These comments are required be addressed at the time a building permit is submitted for review. All other comments must be addressed to the satisfaction of the Board of Commissioners of the Township of Abington.

Code Enforcement Department:

1. No construction is shown to be completed at this time on the plan submitted. However, in the event that construction is proposed, the applicant is required to submit sealed architectural plans that comply with the residential constructions adopted by the Township of Abington at the time of submission. (BP)

2. All contractors and sub-contractors working on this site are required to be registered with Attorney General's Office of the Commonwealth of Pennsylvania. (BP)

3. Separate permits are required for all electrical, heating, air conditioning and the construction of any structures. (BP)

Plumbing Inspector's Office:

4. All plumbing work proposed to be completed in connection with this project is required to be applied for and completed by a Master Plumber that is registered with this office. (BP)

5. All plumbing work must be designed and installed to comply with the Plumbing Code adopted by the Township of Abington at the time the application is submitted for review. (BP)

Fire Marshal's Office:

6. No comment at this time.

Engineering Office:

7. Sanitary sewers are available for this project. This area is not affected by the sanitary sewer moratorium imposed by DEP on flows through Cheltenham Township.

8. In the event that this application is approved, the applicant will be required to submit (2) new executed {signed, notarized and recorded} deeds. One for each of the properties. This is a requirement of Section 146-16.B of the Subdivision & Land Development Ordinance and the Township Engineer will not sign the plans without the required deeds.

9. All work performed within the street and/or right-of-way of Cloverely Lane and/or Rydal Road will require a "Highway Permit" from the Engineering Office of the Township of Abington. Permit fee information can be obtained by contacting this office directly. {BP}

10. All sanitary sewer pipes that are to be placed within the right-of-way of the Township of Abington are required to be Class 52 Ductile Iron Pipe. Plastic/PVC piping is not acceptable within the right-of-way. {BP}

11. The plans submitted for review does not include a building footprint. The applicant should show the proposed or conceptual footprint so as to determine the location.

12. The plan does indicate an on-site storm water management location. Even though the applicant is not applying for a building permit at this time, the plan should still show and area for use. A permit is required for this work.

13. The Township Engineer has requested at all signature blocks be relocated to the bottom of the sheet.

14. Prior to the approval of any building permits for the vacant lot, the applicant and/or developer is required to apply for a storm water management permit from the Engineering Office of the Township of Abington. Permit and inspection fees for this work is available by contacting the Engineering Department directly @ 267-536-1044.{BP}

15. What was used for the base datum? This office would prefer if the contours and elevations were based on Township datum. The applicant may contact the Engineering Department directly for more accurate information.

Planning Zoning Office:

16. An ACT 537 Exemption Application has been filed in connection with this plan. The application has been reviewed and found to be complete. Staff recommends approval of the Sanitary Sewer Exemption Application.

17. The plan plots the location of steep slope within the proposed building envelope. Please be aware that the permitted amount of disturbance of the defined steep slope is area is 500 square feet or less. Any disturbance over 500 square feet will require approval of the Zoning Hearing Board.

18. The plan submitted should be revised to correctly list the yard requirements. As a corner property, this site is required to one front yard setback of 50 feet, one front yard setback of 40 feet and two side yards of 20 feet each.

19. This office would suggest that the placement of the driveway for the proposed new lot be restricted to the side yard setback adjoining the shared property line with John & Debra Harding. This would allow the driveway to be installed outside the limits of the defined steep slope and over 150 feet from the intersection of Cloverly Lane & Rydal Road.

20. The applicant is required to submit a letter from Aqua stating that public water is available for this development.

21. The applicant should submitted a letter from PECO stating that electric and/or gas is available for this development.

22. The plan submitted plots the building envelope, but not the proposed single family dwelling unit. As a final minor subdivision plan Architectural Plans are required. This will require a waiver from the Board of Commissioners.

23. Until the proposed impervious coverage number is known, calculating the size of the on-site storm water management system will be very difficult. At best, the property is permitted a maximum total of 10,898 square feet on impervious coverage. The applicant may elect to plot the location of the on-site storm water management system based on that number.

24. This application is required to obtain the following waivers from the Subdivision & Land Development Ordinance of the Township of Abington.

A. **Section 146-11.A - Property Identification Plan** – The plan is required to supply the tax parcel information, owner's name & lot area for all properties within 400 feet of the site(s) involved in this application. Staff supports this request.

B. **Section 146-11.B – Existing Features Plan** – The plan is required to plot the location of all utilities on the sites and within 400 feet of the properties involved in this application. Staff supports this request.

C. **Section 146-11.C – Proposed Layout Plan** – The plan is required to plot the location of all existing utilities, to include the size, type and depth, all existing improvements proposed to remain and be removed. Staff supports this request.

G. **Section 146-11.I – Phasing Plan** - A plan not required to be submitted, however this is a single lot application with no major public improvement that would require a phased development of the property. The applicant has requested this waiver. Staff supports this request.

H. **Section 146-11.L – Architectural Plan** – An architectural plan is required to be submitted with this subdivision plan. Staff supports this request.

I. **Section 146-24.D – Right-of-Way Width** – The applicant requests approval to have the existing right-of-way widths remain as plotted. Staff supports this approval.

J. **Section 146-27 – Sidewalks & Curbing** – This area is not improved with sidewalks and/or curbing at this time. The applicant has requested a waiver from installing sidewalks and curbing along their frontage.

K. **Section 146-30 – Lots** – Due to the shape of the proposed lot a waiver is required for this application. Staff is in favor of this request.

L. **Section 146-38 – Street Lighting** – The applicant has requested a waiver to eliminate the requirement to install addition street lighting.

If there are any questions pertaining to the comments listed above, I would ask that you contact the reviewing department directly or I can be reached at 267-536-1017. This application is scheduled to be reviewed by the Planning Commission of the Township of Abington on Wednesday, November 18, 2015.

Sincerely,

Mark A. Penecale
Planning & Zoning Officer

Cc: Lawrence T. Matteo, Jr.; Director of Planning & Code Enforcement
Michael E. Powers; Abington Township Engineer
Bruce Hentschel; Abington Township Building Inspector
Ken Clark; Abington Township Fire Marshal
File Copy (2)

Township of Abington
APPLICATION FOR MODIFICATION OF PLAN

Submission Date RECEIVED OCT 0 5 2015 Application No. SD-15-04

To the Board of Commissioners of the Township of Abington:

BY:----------

The undersigned hereby makes application for modification of plan application requirements as indicated below, under the provisions of the Code of Abington Township, Chapter 146, entitled 'The Subdivision and Land Development Regulations of the Township of Abington of 1991', and any supplements and amendments thereto.

Signature of Applicant

Signature of Land Owner

Title of Plan Submitted: Plan of Minor Subdivision prepared for 1544 Cloverly Lane

A. Plan Type:

- X Minor Subdivision
- ____ Preliminary Major Subdivision
- ____ Final Major Subdivision
- ____ Preliminary Major SD & LD
- ____ Minor Land Development
- ____ Pre Major Land Development
- ____ Final Major Land Development
- ____ Final Major SD & LD

Regulation Topic	Section #	Extent of Modification Requested
Property Identification	146-11.A & 146-11.B	(Partial Waiver) To not include all properties & existing features within 400 feet of the site.
Street Plan	146-11.F.b	To not require profile plans, as no new streets are proposed
Phasing Plan	146-11.I	To not require a phasing plan with defined timelines
Recreational Facilities Plan	146-11.J	To not require a recreational facilities plan
Architectural Plan	146-11.L	To not require tentative architectural plans (architecture is unknown at this time & a tentative plan would provide no benefit)
Right of Way Width	146-24.D.1	To allow the existing cartways in lieu of the required widths
Curb, Gutter & Sidewalk	146-27	To not require sidewalks and curbs along Cloverly Lane or along Rydal Road
Street Lighting	146-38	To not require additional street lighting

Fees acknowledged and modification request received:

Signature of Official

10/6/15
Date

Township of Abington
APPLICATION FOR APPROVAL OF PLAN

Submission Date 10/5/15 Application No. SD-15-04

To the Board of Commissioners of the Township of Abington:

The undersigned hereby makes application for approval of plan type as indicated below, under the provisions of the Code of Abington Township, Chapter 146, entitled 'The Subdivision and Land Development Regulations of the Township of Abington of 1991', and any supplements and amendments thereto.

Signature of Applicant

Signature of Land Owner

Title of Plan Submitted: Plan of Minor Subdivision prepared for 1544 Cloverly Lane

A. Plan Type:

X	Minor Subdivision	____	Minor Land Development
____	Preliminary Major Subdivision	____	Pre Major Land Development
____	Final Major Subdivision	____	Final Major Land Development
____	Preliminary Major SD & LD	____	Final Major SD & LD

B. Plan Identification:

Plan Dated: 9/14/15 Engineer: Nick T. Rose, P.E., ProTract Engineering, Inc.

Plan Proposes: Brief narrative of the proposed activity. Commercial applications to include building square footage and specific uses; Residential applicants to include number of lots and amount of dwelling unit types:

Split one lot into two. Existing dwelling to remain. No construction proposed at this time on Lot 2.

C. Property Identification:

Address/Location 1544 Cloverly Lane, Rydal, PA 19046

between streets Sewell Lane and Rydal Road

(continued on next page)

D. Applicant Identification:

Applicant Gordon B. Cox and Christina M. Cox
Address 1544 Cloverly Lane, Rydal, PA 19046 Phone 215-

Land Owner same as applicant
Address _____ Phone _____

Equitable Land Owner _____
Address _____ Phone _____

Architect _____
Address _____ Phone _____

Engineer Nick T. Rose, P.E., ProTract Engineering, Inc.
Address P.O. Box 58, Hatboro, PA 19040 Phone 215-442-9230

Attorney _____
Address _____ Phone _____

IMPROVEMENTS PROPOSED	UNITS	ESTIMATED COST
Streets		
Street Widening		
Street Signs		
Street Lighting		
Curbs		
Sidewalks		
Storm Sewers		
Water Supply		
Fire Hydrants		
Sanitary Sewers		
Monuments		
Shade Trees		
Open Space		
Park Lane		
Other		
Total Cost:		

Fees received from applicant:

Application Fee $150.00
Review Escrow $1,000.00
Total $1150.00

Fees acknowledged and application accepted as complete:

Signature of Official

Date

RECEIVED
OCT 05 2015
BY:

Check # 6467 - 1,000.00 Rec 882152
Check # 6468 - 150.00 Rec 882153

1. **Development Information**

Name of Development Cox Subdivision
Developer Name G. Bruce & Linda Cox
Address 1544 Cloverly Lane
Rydal, PA 19046
Telephone # 215-370-1242
Email gbrucecox@verizon.net

2. **Location of Development**

a. County Montgomery
b. Municipality Abington
c. Address or Coordinates 1544 Cloverly Lane
d. Tax Parcel # 30-00-09852-00-9
e. USGS Quad Name Frankford
inches up 20.3 over 15.4
from bottom right corner of map.
f. Located in a High Quality/Exceptional Value watershed?
☐ Yes ☒ No

3. **Type of Development Proposed** (check appropriate box)

☒ Residential ☐ Multi-Residential
Describe 2-lot single family subdivision

☐ Commercial ☐ Institutional
Describe

☐ Brownfield Site Redevelopment
☐ Other (specify)

4. **Size**

a. # of lots 2 # of EDUs 1
b. # of lots since 5/15/72 1
c. Development Acreage 1.98
d. Remaining Acreage 0

5. **Sewage Flows** 400 gpd

6. **Proposed Sewage Disposal Method** (check applicable boxes)

a. ☒ Sewerage System
☒ Existing (connection only) ☐ New (extension)
☐ Public ☐ Private
☐ Pump Station(s)/Force Main ☐ Gravity
Name of existing system being extended
Abington Township
Interceptor Name Pennypack
Treatment Facility Name Philadelphia Northeast Treatment Facility
NPDES Permit # 0026689

b. ☐ Construction of Treatment Facility
☐ With Stream Discharge
☐ With Land Application (not including IRSIS)
☐ Other
☐ Repair?
Name of waterbody where point of discharge is proposed (if stream discharge)

c. ☐ Onlot Sewage Disposal Systems
(check appropriate box)
☐ Individual onlot system(s) (including IRSIS)
☐ Community onlot system
☐ Large-Volume onlot system

d. ☐ Retaining tanks
Number of Holding Tanks
Number of Privies

7. ☒ **Request Sewage Facilities Planning Module forms in electronic format**

8. **Request for Planning Exemption**

a. Protection of rare, endangered or threatened species
Check one:
☒ The "PNDI Project Environmental Review Receipt" is attached.
or
☐ A completed "PNDI Project Planning & Environmental Review Form," (PNDI Form) is attached. I request DEP staff to complete the required PNDI search for my project. I realize that my planning exemption will be considered incomplete and that the DEP processing of my planning exemption request will be delayed, until a "PNDI Project Environmental Review Receipt" and all supporting documentation from jurisdictional agencies (when necessary) is/are received by DEP.

Applicant or Consultant Initials

b. ☒ Plot Plan Attached ☐ Site Reports Attached

c. Onlot Disposal Systems

(1) I certify that the Official Plan shows this area as an onlot service area.

(Signature of Municipal Official) Date
Name (Print) Title
Municipality (must be same as in 2.b.)
Telephone #

(2) I certify that each lot in this subdivision has been tested and is suitable for both a primary and replacement sewage disposal system.

Signature of SEO) Date
Name (Print) Certification #
Telephone #

(3) I certify that each lot in this subdivision is at least 1 acre in size

(Signature of Project Applicant/Agent) Date

d. Public Sewerage Service (i.e., ownership by municipality or authority)

Based upon written documentation, I certify that the facilities proposed for use have capacity and that no overload exists or is projected within 5 years. (Attach documents.)

(Signature of Municipal Official) Date
Michael LeFevre /Township Manager
Name (Print) Title
Abington Township
Municipality (must be same as in 2.b.)
Telephone # 267-536-1001

Township of Abington
Planning Commission Recommendation Form

Application Number: SD-15-04 **Date: November 18, 2015**

Applicant's Name: Gordon B. & Christina M. Cox

Applicant's Address: 1544 Cloverly Lane, Rydal, Pa. 19046

Recommendation: [X] APPROVED [ ] DENIED VOTE: 7 of 7

Over View: This is the subdivision application of **Gordon B. & Christina M. Cox**, owners of the property located at 1544 Cloverly Lane, Rydal, Pa. The applicants propose to subdivide the 2.98 acre site into two parcels. Lot #1 is shown to contain the existing single family dwelling on a parcel of 1.98 acres is size. Lot #2 is not proposed to be developed at this time and is shown at 1.00 acre in lot area. The proposed properties comply with the dimensional requirements of Section 301.3 of the Zoning Ordinance. The property is zoned within the R-1 Residential District of Ward # 1 of the Township of Abington.

Comments:

1. Sanitary sewers are available for this project at this time. However, since no construction is proposed at this time, an Act 537 Exemption Application has been submitted with this application.

2. If this application is approved, the applicant is required to provide the township with two (2) new, executed (signed, notarized and recorded) deeds. This is a requirement of the subdivision process. The Township Engineer will not sign the plans without the required deeds.

3. The items listed within the Staff Review letter dated October 29, 2015 become a condition of this application if approved by the Board of Commissioners of the Township of Abington.

4. The Planning Commission recommends that the developer use extreme care in the development of this property to ensure a minimal disturbance of the existing tree growth and steep slope on this property.

The following waivers have been requested.

A. **Section 146-11.A - Property Identification Plan** – The plan is required to supply the tax parcel information, owner's name & lot area for all properties within 400 feet of the site(s) involved in this application. Staff supports this waiver. Yes {X} No { }

B. **Section 146-11.B – Existing Features Plan** – The plan is required to plot the location of all utilities on the sites and within 400 feet of the properties involved in this application. Staff supports this request. Yes {X} No { }

C. **Section 146-11.C – Proposed Layout Plan** – The plan is required to include first floor elevations, all existing utilities and all improvements on the site. Staff supports this request. Yes {X} No { }

D. **Section 146-11.I – Phasing Plan** – The applicant is required to submit a phasing plan with this application. However, no public improvements are proposed and this is a single lot subdivision. Staff supports this request. Yes {X} No { }

E. **Section 146-11.L – Architectural Plan** – The applicant is required to submit tentative architectural plans. Lot #2 is proposed for resale and the design of the home is not known at this time. Staff supports this waiver request. Yes {X} No { }

F. **Section 146.24.D – Right-of-Way Width** – The applicant requests approval to have the right-of-way widths remain as plotted. Staff supports this request. Yes {X} No { }

G. **146-27 – Sidewalks & Curbing** – Sidewalks and curbing is required to be installed along the street frontage of both lots. Sidewalks and curbing do not exist in this area and staff supports this waiver. Yes {X} No { }

H. **Section 146-30 – Lots** – Lots are required to be rectangular is shape. Due the triangular shape of the proposed lot, a waiver is required. Staff supports this request. Yes {X} No { }

I. **Section 146-38 – Street Lighting** – Street lots are required to be install with all new developments. Staff supports this waiver request. Yes {X} No { }

MAPenecale
11/18/2015

MONTGOMERY COUNTY
BOARD OF COMMISSIONERS
JOSH SHAPIRO, CHAIR
VALERIE A. ARKOOSH, MD, MPH, VICE CHAIR
BRUCE L. CASTOR, JR., COMMISSIONER

MONTGOMERY COUNTY
PLANNING COMMISSION
MONTGOMERY COUNTY COURTHOUSE • PO BOX 311
NORRISTOWN, PA 19404-0311
610-278-3722
FAX: 610-278-3941 • TDD: 610-631-1211
WWW.MONTCOPA.ORG

JODY L. HOLTON, AICP
EXECUTIVE DIRECTOR

November 18, 2015

Mr. Mark A. Penecale, Zoning Officer
Abington Township
1176 Old York Road
Abington, Pennsylvania 19001-3713

Re: MCPC #15-0250-001
1544 Cloverly Lane, 2 Lots on 3.11 acres
Situate: Cloverly Lane (S & W.), N. of Cherry Lane
Abington Township

Dear Mr. Penecale:

We have reviewed the above-referenced subdivision in accordance with Section 502 of Act 247, "The Pennsylvania Municipalities Planning Code," as you requested on October 13, 2015. We forward this letter as a report of our review.

BACKGROUND

Gordon and Christina Cox, the Applicants, propose to subdivide a 3.11 acre property into two lots. Proposed Lot 1 would be 1.98 acres, and Proposed Lot 2 would be 1.00 acres. The property is located at 1544 Cloverly Lane, in the R-1 Low Density Residential District.

RECOMMENDATION

The Montgomery County Planning Commission (MCPC) generally supports the applicant's proposal, however, in the course of our review we have identified the following issue that the applicant and Abington Township may wish to consider prior to final plan approval. Our comment is as follows:

REVIEW COMMENTS

ACCESS

A. Driveway. We recommend that any driveway created on Lot 2 in the future be located outside the steep slopes. This would mean locating the driveway near the Harding property line.

CONCLUSION

We wish to reiterate that MCPC generally supports the applicant's proposal and we believe that our suggestion will better achieve the municipality name planning objectives for protecting steep slopes.

Please note that the review comments and recommendations contained in this report are advisory to the municipality and final disposition for the approval of any proposal will be made by the municipality.

Should the governing body approve a final plat of this proposal, the applicant must present the plan to our office for seal and signature prior to recording with the Recorder of Deeds office. A paper copy bearing the municipal seal and signature of approval must be supplied for our files.

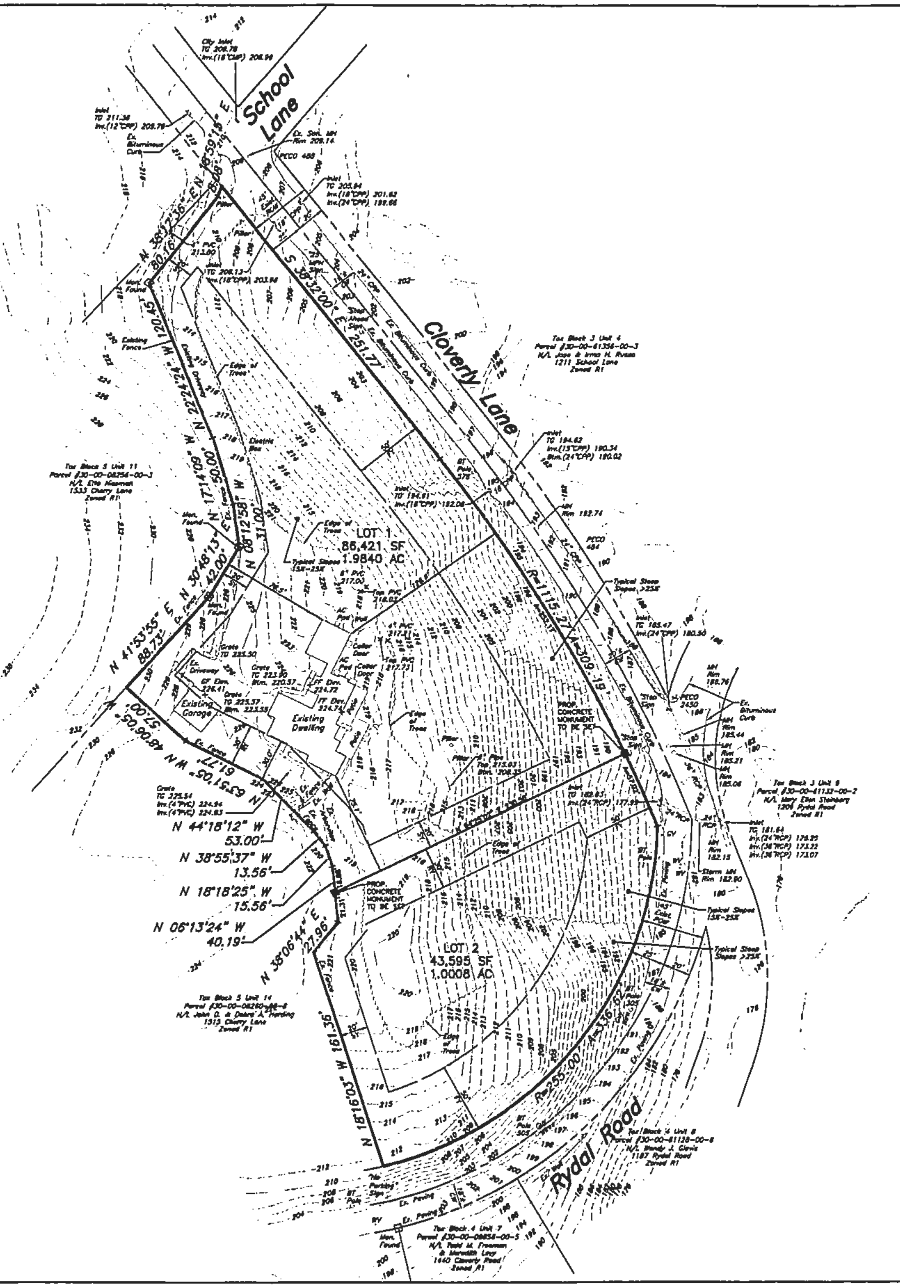
Sincerely,

Mike Narcowich, AICP, Principal Community Planner
mnarcowi@montcopa.org
610-278-5238

c: Nicholas T. Rose, RPE, Applicant's Representative and Engineer
Ron Rosen, Chair, Township Planning Commission
Michael LeFevre, Township Manager
Lawrence T. Matteo Jr., Director of Planning and Code Enforcement
Michael E. Powers, P.E., Township Engineer
Michael P. Clarke, Esq., Rudolph Clarke, LLC, Township Solicitor

Attachments: Reduced Copy of Applicant's Plan
Aerial Photo of Site

Aerial Photo of Site (Source: Pictometry, 2015; Image Capture Date: 7/5/14)



COMMONWEALTH OF PENNSYLVANIA
COUNTY OF MONTGOMERY:
On the ________ day of ____________, A.D. ______, before me, the Subscriber, a Notary Public of the Commonwealth of Pennsylvania, residing in ______________________, personally appeared Gordon B. Cox and Christine M. Cox, known to me (or satisfactorily proven) to be the person(s) whose name(s)(is/are) subscribed to the foregoing plan, and acknowledged that (he, she, they)(is/are) the owner(s) of the designated land, that all necessary approval of the plan has been obtained and is endorsed thereon, and that (he, she, they) desire that the foregoing plan may be duly recorded.

______________________ Notary Public

______________________ My Commission Expires

______________________ Owner
Gordon B. Cox

______________________ Owner
Christine M. Cox

APPROVAL OF TOWNSHIP:
Approved by the Board of Commissioners of the Township of Abington this ________ day of ______________, ______

______________________ President

Attest ______________________ Secretary

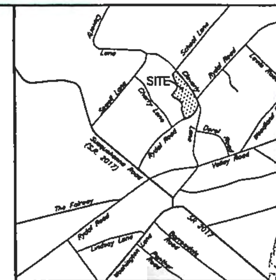
______________________ Engineer

Certified by the Montgomery County Planning Commission this ____________ day of ____________, ______. File #______

Attest ______________________ Secretary

CERTIFICATION FOR RECORDING:
Recorded in the Office for the Recording of Deeds for Montgomery County at Norristown, Pennsylvania, in Plan Book______, Page No.______, on this ____________ day of ____________, ______

By:______________________
Recorder of Deeds



LOCATION MAP/SCALE: 1"=800'

NOTES:

1. TRACT IDENTIFICATION:
   TAX BLOCK 5 UNIT 2
   PARCEL #30-00-09852-00-6
   DEED BOOK 6637 PAGE 641

2. OWNER:
   GORDON B. COX AND CHRISTINA M. COX
   1544 CLOVERLY LANE
   RYDAL, PA 19046

3. BOUNDARY DIMENSIONS AND TOPOGRAPHIC INFORMATION TAKEN FROM DEEDS AND PLANS OF RECORD AND PHYSICAL FIELD SURVEY PERFORMED BY PROTRACT ENGINEERING INC. IN AUGUST 2015.

4. TRACT AREA SUMMARY:
   TRACT AREA TO R.O.W. LINE = 130,016 SF (2.9848 ACRES)
   PROPOSED LOT 1 = 86,421 SF (1.9840 ACRES)
   PROPOSED LOT 2 = 43,595 SF (1.0008 ACRES)

5. ZONING REQUIREMENTS:
   R1 LOW DENSITY RESIDENTIAL:

	REQUIRED	PROPOSED LOT 1	PROPOSED LOT 2
MINIMUM LOT AREA	1 ACRE	1.98 AC	1.00 AC
MINIMUM LOT WIDTH	200 FT	478 FT	280 FT
MINIMUM LOT DEPTH	100 FT	236 FT	170 FT
MINIMUM FRONT YARD	50 FT*	126.0 FT	N/A
MINIMUM SIDE YARD	20 FT	75.1 FT	N/A
MINIMUM REAR YARD	30 FT	30.0 FT	N/A
MAXIMUM BUILDING HEIGHT	35 FT	< 35 FT	N/A
MAXIMUM BUILDING COVERAGE	20%	4.4%	N/A
MAXIMUM IMPERVIOUS COVERAGE	25%	14.8%	N/A
MINIMUM GREEN AREA	75%	85.2%	100%

   * 40 FEET ON ONE SIDE OF A CORNER LOT

6. SITE IS OUTSIDE THE FEMA 100-YEAR FLOODPLAIN AS SHOWN ON PANEL 401 OF 451 PREPARED FOR MONTGOMERY COUNTY.

7. SOILS DATA WAS OBTAINED FROM THE USDA/NRCS MONTGOMERY COUNTY SOILS SURVEY FROM SEPTEMBER 2014. SOILS ON SITE ARE CLASSIFIED AS Cn – CODORUS SILT LOAM; AND PeC – PARKER GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES.

8. BOTH LOTS TO BE SERVED BY PUBLIC WATER AND PUBLIC SEWER.

9. THE FOLLOWING WAIVERS ARE REQUESTED FROM THE SUBDIVISION AND LAND DEVELOPMENT ORDINANCE:

   A) FROM SECTION 146-11.A & 146-11.B (PARTIAL WAIVER) TO NOT INCLUDE ALL PROPERTIES AND EXISTING FEATURES WITHIN 400 FEET OF THE SITE.

   B) FROM SECTION 146-11.F.b TO NOT REQUIRE PROFILE PLANS, AS NO NEW STREETS ARE PROPOSED.

   C) FROM SECTION 146-11.I, TO NOT REQUIRE A PHASING PLAN WITH DEFINED TIMELINES.

   D) FROM SECTION 146-11.J, TO NOT REQUIRE A RECREATIONAL FACILITIES PLAN.

   E) FROM SECTION 146-11.L, TO NOT REQUIRE TENTATIVE ARCHITECTURAL PLANS (ARCHITECTURE IS UNKNOWN AT THIS TIME AND TENTATIVE ARCHITECTURAL PLANS WOULD PROVIDE NO BENEFIT).

   F) FROM SECTION 146-24.D.1, TO ALLOW THE EXISTING CARTWAYS IN LIEU OF THE REQUIRED WIDTHS.

   G) FROM SECTION 146-27, TO NOT REQUIRE SIDEWALKS AND CURBS ALONG CLOVERLY LANE OR ALONG RYDAL ROAD.

   H) FROM SECTION 146-38 TO NOT REQUIRE ADDITIONAL STREET LIGHTING.

10. ANY FUTURE TREE REMOVAL AND TREE REPLACEMENT ON LOT 2 MUST COMPLY WITH ZONING ORDINANCE SECTION 801.U. MAXIMUM WOODS DISTURBANCE = 75%.

11. ANY FUTURE DEVELOPMENT ON LOT 2 MUST COMPLY WITH ZONING ORDINANCE SECTION 802 REGARDING REGULATIONS OF STEEP SLOPES (OVER 25% SLOPE).

PLAN GRAPHIC SCALE
40 0 40 80 120

NORTH ARROW

NICHOLAS T. ROSE
REGISTERED PROFESSIONAL ENGINEER
PE039251E
PENNSYLVANIA

MCPC No.
PROCESSED and REVIEWED. A report has been prepared by the Montgomery County Planning Commission in accordance with the Municipalities Planning Code.
Certified this date
For the Director
Montgomery County Planning Commission

No.	Date	Description	By

Township: ABINGTON
County: MONTGOMERY
Date: 9-14-15
Scale: 1"=40'
Sheet Number: 1 of 1
Project Number: H2292
Cad File Name: BASE.DWG
File Number: ----
Drafter/Engineer: EMS/NTR

PLAN OF MINOR SUBDIVISION
PREPARED FOR
1544 CLOVERLY LANE

ProTract Engineering, Inc.
84 East Moreland Avenue, P.O. Box 56, Hatboro, Pennsylvania 19040
Phone (215)443-5238 Fax (215)443-5238

Code Enforcement and Land Development

BOARD ACTION REQUEST

DECEMBER 2, 2015
~~November 30, 2015~~

CE 2
Agenda Item Number

CODE ENFORCEMENT

TOWNSHIP MANAGER

AGENDA ITEM

Ordinance No. 2100
Stormwater Management Ordinance
Tookany/Tacony-Frankford Watershed Stormwater Management Plan

PREVIOUS ACTION

- The proposed ordinance is the last of the three updates required by Commonwealth of Pennsylvania.
- The proposed ordinance implements the State's requirements for the Tookany/Frankford, Pennypack and Wissanhickon Watersheds.
- The Abington Township Planning Commissioner has reviewed this Ordinance at their schedule October 27, 2015 meeting.

RECOMMENDED BOARD ACTION

- Motion to advertise a Public Hearing to be held on Thursday, January 14, 2016 at 7:30 pm on Ordinance No. 2100, entitled Stormwater Management Ordinance.

COMMENTS

- ***This Ordinance was prepared by Michael Filmyer, PE of BCM Engineering/Cardno Group under the direction of the Engineering Office of the Township of Abington.***
- ***Ordinance No. 2100 was reviewed by the Abington Township Planning Commission on October 27, 2015. Several grammatical corrections were suggested.***
- ***The revised version of proposed Ordinance No. 2100 is scheduled to be reviewed by the Abington Township Planning Commission on Monday, December 14, 2015.***

TOWNSHIP OF ABINGTON
MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO. 2100

AN ORDINANCE AMENDING CHAPTER 142 – "STORMWATER MANAGEMENT," TO REPEAL THE EXISTING PROVISIONS AND REPLACE THEM IN THEIR ENTIRETY AS SET FORTH HEREIN

WHEREAS, the Township of Abington is a Township of the First Class, duly organized and existing pursuant to the applicable laws of the Commonwealth of Pennsylvania; and

WHEREAS, pursuant to section 1502.44 of the First Class Township Code of the Commonwealth of Pennsylvania, 53 P.S. §56544, the Board of Commissioners has the authority to enact and amend provisions of the Abington Township Code ("Code") at any time it deems necessary for the health, safety, morals, general welfare, cleanliness, beauty, convenience and comfort of the Township and the inhabitants thereof; and

WHEREAS, the Board of Commissioners of the Township of Abington has determined that Chapter 142 – "Stormwater Management," should be amended by the repeal of the existing provisions and replaced with the provisions attached hereto, incorporated herein and labeled Exhibit "A" for the health, safety, morals, general welfare, cleanliness, beauty, convenience and comfort of the Township and the inhabitants thereof.

NOW, THEREFORE, the Board of Commissioners of the Township of Abington does hereby **ENACT** and **ORDAIN** as follows:

1. Chapter 142 – "Stormwater Management," is amended to repeal the existing provisions in their entirety and replacing them with as reflected in Exhibit "A" attached hereto.

2. All other ordinances, portions of ordinances, or any section of the Code inconsistent with this Ordinance are hereby repealed.

3. This Ordinance shall become effective five (5) days after enactment.

ORDAINED AND ENACTED this _____ day of _____, 2015.

TOWNSHIP OF ABINGTON
BOARD OF COMMISSIONERS

Attest:

_____ By: _____

Michael LeFevre, Secretary Wayne Luker, President

MONTGOMERY COUNTY
BOARD OF COMMISSIONERS
JOSH SHAPIRO, CHAIR
VALERIE A. ARKOOSH, MD, MPH, VICE CHAIR
BRUCE L. CASTOR, JR., COMMISSIONER

MONTGOMERY COUNTY
PLANNING COMMISSION
MONTGOMERY COUNTY COURTHOUSE • PO BOX 311
NORRISTOWN, PA 19404-0311
610-278-3722
FAX: 610-278-3941 • TDD: 610-631-1211
WWW.MONTCOPA.ORG

JODY L. HOLTON, AICP
EXECUTIVE DIRECTOR

October 27, 2015

RECEIVED
OCT 30 2015
BY:

Mr. Mark A. Penecale, Zoning Officer
Abington Township
1176 Old York Road
Abington, PA 19001-3713

Re: MCPC #15-0235-001
Zoning Text Amendment – Stormwater Management Ordinance
Abington Township

Dear Mr. Penecale:

We have reviewed the above-referenced (subdivision/land development) or (zoning text/zoning map amendment) in accordance with Section (502) or (601) of Act 247, "The Pennsylvania Municipalities Planning Code," as you requested on October 20, 2015. We forward this letter as a report of our review.

BACKGROUND

The Township proposes to amend its zoning ordinance to comply with its responsibilities pursuant to Pennsylvania's Act 167 Storm Water Management Act. We previously reviewed a proposed zoning text amendment for the stormwater management ordinance on December 16, 2013.

RECOMMENDATION

The Montgomery County Planning Commission (MCPC) supports the applicant's proposal without comment as we have found it to be generally consistent with MONTCO 2040: A Shared Vision, The Comprehensive Plan for Montgomery County and the Abington Township Comprehensive Plan of 2007. Specifically, this proposal is consistent with the MONTCO 2040 goals of:

- Improving stormwater management and reducing the impact of flooding.
- Supporting a modern, resilient, green, and energy-efficient infrastructure network.

- Conserving natural resources and environmentally-sensitive areas.

CONCLUSION

We wish to reiterate that MCPC supports the applicant's proposal and we feel that the proposed Stormwater Management Ordinance is a job well done.

Please note that the review comments and recommendations contained in this report are advisory to the municipality and final disposition for the approval of any proposal will be made by the municipality.

Sincerely,

Mike Narcowich, AICP, Principal Community Planner

mnarcowi@montcopa.org

610-278-5238

c: Ron Rosen, Chairperson, Township Planning Commission
Michael LeFevre, Township Manager
Lawrence T. Matteo Jr., Director of Planning and Code Enforcement
Michael E. Powers, P.E., Township Engineer
Michael P. Clarke, Esq., Rudolph Clarke, LLC, Township Solicitor

STORMWATER MANAGEMENT ORDINANCE

Implementing the Requirements of the:

Tookany/Tacony-Frankford Watershed Stormwater Management Plan
Pennypack Creek Watershed Stormwater Management Plan
Wissahickon Creek Watershed Stormwater Management Plan

ORDINANCE NO. 2100 OF _____

TOWNSHIP OF ABINGTON
MONTGOMERY COUNTY, PENNSYLVANIA

Adopted at a Public Meeting held on

_____, 201__

ARTICLE I - GENERAL PROVISIONS

Section 101. Short Title

This Ordinance shall be known and cited as the "Stormwater Management Ordinance".

It will implement the Requirements of the (1) Tookany/Tacony-Frankford Watershed Stormwater Management Plan (PA Act 167), (2) the Pennypack Creek Watershed Stormwater Management Plan (PA Act 167) and (3) the Wissahickon Creek Watershed Stormwater Management Plan (PA Act 167).

Section 102. Statement of Findings

The governing body of the Municipality finds that:

A. Inadequate management of accelerated stormwater runoff resulting from development throughout a watershed increases flood flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of existing streams and storm sewers, greatly increases the cost of public facilities to carry, convey, control and manage stormwater, undermines floodplain management and flood control/reduction efforts in upstream and downstream communities, reduces groundwater recharge, threatens public health and safety, and increases non-point source pollution of water resources.

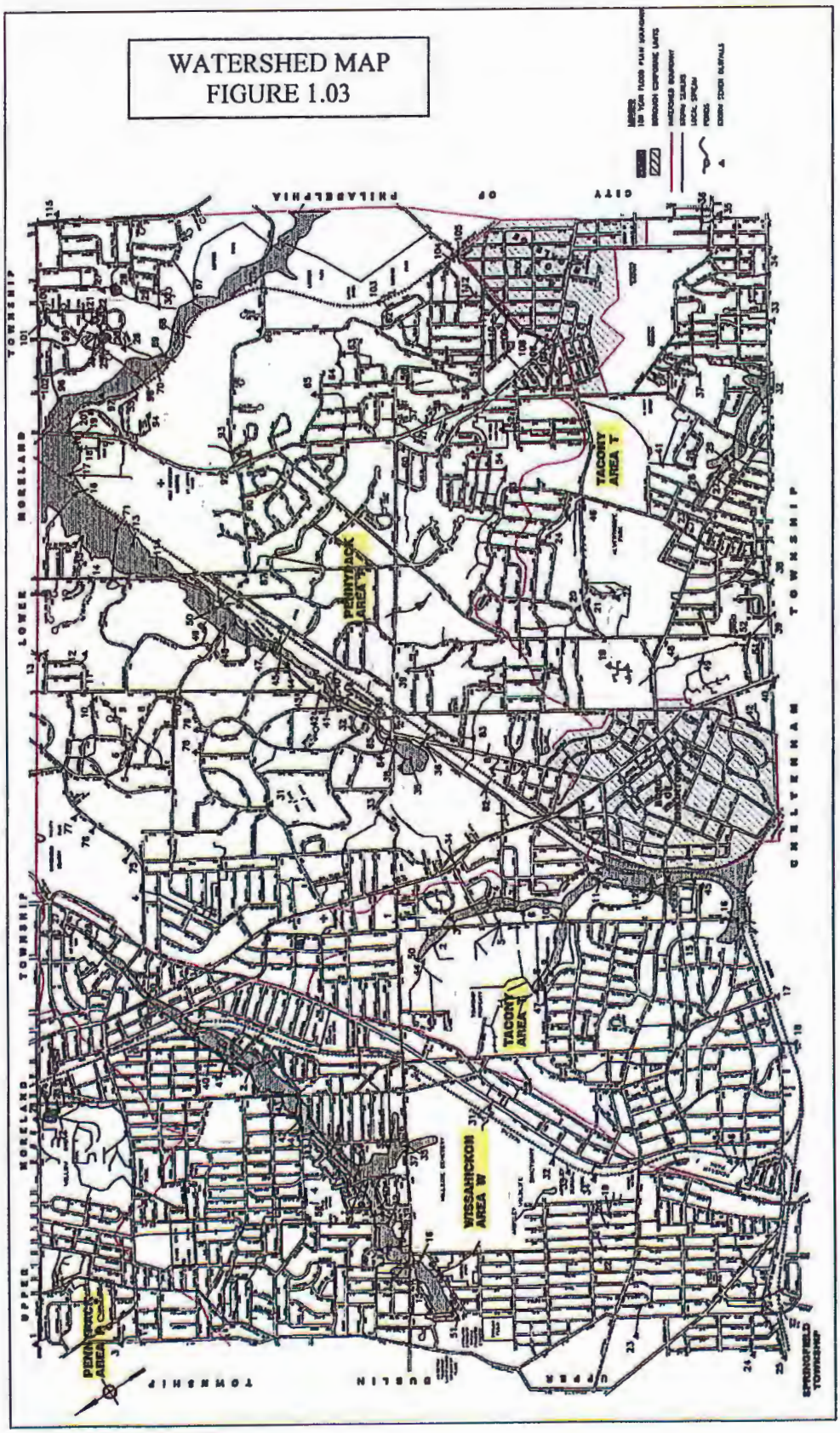
B. Inadequate planning and management of stormwater runoff resulting from land development throughout a watershed can also harm surface water resources by changing the natural hydrologic patterns, accelerating stream flows (which increase scour and erosion of streambeds and stream banks, thereby increasing sedimentation), destroying aquatic habitat, and increasing aquatic pollutant concentrations and loadings such as sediments, nutrients, heavy metals, and pathogens. Groundwater resources are also impacted through loss of recharge.

C. A comprehensive program of stormwater management, including minimization of impacts of development, redevelopment, and activities causing accelerated runoff and erosion and loss of natural infiltration, is fundamental to the public health, safety, welfare, and the protection of the people of Abington, and all of the people of the Commonwealth, their resources, and the environment.

D. Stormwater is an important resource by providing groundwater recharge for water supplies and baseflow of streams, which also protects and maintains surface water quality.

E. Impacts from stormwater runoff can be minimized by using project designs that maintain the natural hydrologic regime and sustain high water quality, groundwater recharge, stream baseflow, and aquatic ecosystems. The most cost-effective and environmentally advantageous way to manage stormwater runoff is through nonstructural project design that minimizes impervious surfaces and sprawl, avoids sensitive areas (i.e., stream buffers, floodplains, steep slopes), and considers topography and soils to maintain the natural hydrologic regime.

WATERSHED MAP
FIGURE 1.03



Section 104. Statutory Authority

The Municipality is empowered to regulate land use and activities that may affect runoff and surface and groundwater quality and quantity by the authority of:

A. Primary Authority.

The Municipality is empowered to regulate land use activities that affect runoff and surface and groundwater quality and quantity by the authority of the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, et seq., as amended, the "Storm Water Management Act" and by the authority of P.S. §§ 55101 et. seq.- First Class Township Code.

B. Secondary Authority.

The municipality also is empowered to regulate land use activities that affect runoff by the authority of the Act of July 31, 1968, P.L. 805, No. 247, The Pennsylvania Municipalities Planning Code, as amended.

Section 105. Applicability

All Regulated Activities and all activities that may affect stormwater runoff, including Land Development and Earth Disturbance Activities, are subject to regulation by this Ordinance.

Regulated Activities include the following:

a) Land development,
b) Subdivisions,
c) Alteration of the natural hydrologic regime,
d) Construction or reconstruction (see definition in Section 202.B) of or addition of new impervious or semi-pervious surfaces (i.e., driveways, parking lots, roads, etc.),
e) Construction of new buildings or additions to existing buildings,
f) Redevelopment,
g) Diversion piping or encroachments in any natural or man-made channel,
h) Stormwater BMPs or appurtenances thereto,
i) Any of the above regulated activities which were approved more than five (5) years prior to the effective date of this Ordinance, never constructed, and then subsequently resubmitted for municipal approval or permits..

Section 106. Exemptions

The Township requires Stormwater Management controls on *all* Regulated Activities and all activities that may affect storm water runoff. All Land Development and Earth Disturbance Activities are subject to regulation by this Ordinance. The Township's minimum Stormwater Management requirements including permit applications, BMP sizing criteria and applicable fees can be found in Appendix I. Specific exemptions for various components required by this ordinance can be found below:

Area P

A. Tables 106.1P summarize the eligibility for exemptions from certain requirements in this Ordinance. "Proposed Impervious Surface" in Table 106.1 includes new, additional, or replacement impervious surface/cover. "Repaving" existing surfaces without reconstruction (see Section 202) does not constitute replacement.

Table 106.1P - Eligibility for Exemptions for the Montgomery County Portions of the Watershed1

Ordinance Article or Section	Type of Project	Proposed New Impervious Cover						
		< 1,000 sq. ft.			≥ 1,000 to < 5,000 sq. ft.			≥ 5,000 sq. ft.
		Earth Disturbance <5,000 sq. ft.	Earth Disturbance ≥5,000 sq. ft. - 1 acre	Earth Disturbance > 1 acre	Earth Disturbance <5,000 sq. ft.	Earth Disturbance ≥5,000 sq. ft. - 1 acre	Earth Disturbance > 1 acre	All Earth Disturbance Categories
Article III SWM Site Plan Requirements	Development and Redevelopment	Exempt	Not Exempt*	Not Exempt	Not Exempt *	Not Exempt *	Not Exempt	Not Exempt
Section 404 Nonstructural Project Design	Development and Redevelopment	Exempt	Not Exempt*	Not Exempt	Not Exempt *	Not Exempt *	Not Exempt	Not Exempt
Section 405 Groundwater Recharge	Development and Redevelopment	Exempt	Not Exempt*	Not Exempt	Not Exempt *	Not Exempt *	Not Exempt	Not Exempt
Section 406 Water Volume Control Requirements	Development and Redevelopment	Not Exempt See Section 106	Not Exempt*	Not Exempt	Not Exempt *	Not Exempt *	Not Exempt	Not Exempt
Section 408 Stream Bank Erosion Requirements	Development	Exempt	Not Exempt*	Not Exempt	Not Exempt *	Not Exempt *	Not Exempt	Not Exempt
	Redevelopment		Exempt		Exempt	Exempt		
Section 409 Stormwater Peak Rate Control and Management Districts	Development and Redevelopment	Exempt	Not Exempt*	Not Exempt	Exempt	Not Exempt *	Not Exempt	Not Exempt
Erosion and Sediment Pollution Control Plan	Earth Disturbance	See Earth Disturbance Requirements	See Earth Disturbance Requirements	See Earth Disturbance Requirements	See Earth Disturbance Requirements	See Earth Disturbance Requirements	See Earth Disturbance Requirements	See Earth Disturbance Requirements
		(Refer to municipal earth disturbance requirements, as applicable)						

Notes:
Exempt – Exempt unless a determination is made by the municipality that the project is subject to Section 106.C. SWM Site Plan may still be required by other sections or provisions.
Not Exempt – Not exempt. All provisions apply.
Not Exempt* – Modified SWM Site Plan required, Small Project Site Plan possible.
Sites with less than one thousand (1,000) square feet of new impervious surface, but between five thousand (5,000) square feet and one (1) acre of earth disturbance must submit a SWM Site Plan to the Municipality which need consist only of the items in Sections 302.A.2 and 4; 302.B.10, 11, 14, and 25; and 302.D.1 and 3, and related supportive material needed to determine compliance with Sections 404 through 409. The applicant can use the protocols in the Small Project SWM Site Plan if Municipality has adopted Subappendix A1.

C. Infiltration Exemptions

1. Depth to Limiting Zone

A minimum of two (2) feet of soil suitable for infiltration must exist between the invert of the infiltration BMP and the top of the nearest limiting zone. Otherwise, the Recharge Volume (Rev) requirement shall not be applied to the development site, and the entire Water Quality Storage Volume (WQv) must be treated.

2. Hotspots

Stormwater Hotspots – Below is a list of types of hotspots recognized by the Municipality. If a site is a potential hotspot, it has important implications for how stormwater is managed. First and foremost, untreated stormwater runoff from hotspots concentrated into a collection system, shall not be recharged into groundwater where it may contaminate water supplies. Therefore, the Re_v requirement shall NOT be applied to development sites that fit in a hotspot (the entire WQ_v must still be treated). Second, a greater level of stormwater treatment shall be applied at hotspot sites to prevent pollutant wash off after construction. The Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) stormwater program requires some industrial sites to prepare and implement a stormwater pollution prevention plan.

List of potential hotspots:

- Vehicle salvage yards and recycling facilities
- Vehicle fueling stations
- Vehicle service and maintenance facilities
- Vehicle and equipment cleaning facilities
- Fleet storage areas (bus, truck, etc.)
- Industrial sites based on Standard Industrial Codes
- Marinas (service and maintenance)
- Outdoor liquid container storage
- Commercial/industrial facilities
- Public works storage areas
- Facilities that generate, transfer, store, or dispose hazardous materials
- Commercial container nursery

The following land uses and activities are not normally considered hotspots:

- Residential streets and rural highways
- Residential development
- Institutional development
- Office developments
- Nonindustrial rooftops
- Pervious areas, except golf courses and nurseries (which may need an integrated pest management (IPM) plan).

Area T

A. Exemptions for Land Use Activities

1. Disconnected Regulated Activities (Regulated Activities that create Disconnected Impervious Areas) smaller in area than 250 sq. ft. are exempt from the peak rate control (Section 409) and drainage plan (Article III) preparation requirements of this Ordinance.

2. Disconnected Regulated Activities (Regulated Activities that create Disconnected Impervious Areas) equal to or greater than 250 sq. ft. and less than 1,000 sq. ft. are exempt only from the peak rate control (Section 409) requirement of this Ordinance.

3. Agricultural plowing and tilling are exempt from the rate control and drainage plan preparation requirements of this Ordinance provided the activities are performed according to the requirements of 25 Pa. Code Chapter 102.

4. Forest management and timber operations are exempt from the rate control and Drainage plan preparation requirements of this Ordinance provided the activities are performed according to the requirements of 25 Pa. Code Chapter 102.

B. Infiltration Exemptions

1. Depth to Limiting Zone

A minimum of 2 feet of soil suitable for infiltration must exist between the invert of the infiltrating Storm Water Management Practice (SMP) and the top of the nearest limiting zone. Otherwise, the Recharge Volume (Rev) requirement shall not be applied to the development site, and the entire Water Quality Storage Volume (WQv) must be treated.

2. Hotspots

Stormwater Hotspots– Below is a list of types of hotspots recognized by the municipality. If a site is a potential hotspot, it has important implications for how stormwater is managed. First and foremost, untreated stormwater runoff from hotspots concentrated into a collection system, shall not be recharged into groundwater where it may contaminate water supplies. Therefore, the Re_v requirement shall NOT be applied to development sites that fit in a hotspot (the entire WQ_v must still be treated). Second, a greater level of stormwater treatment shall be applied at hotspot sites to prevent pollutant wash off after construction. The Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) stormwater program requires some industrial sites to prepare and implement a stormwater pollution prevention plan.

Area W

A. Table 106.1W summarizes the exemptions from certain requirements in this Ordinance. "Proposed Impervious Surface" in Tables 106.1W includes new, additional, or replacement impervious surface/cover. "Repaving" existing surfaces without reconstruction (see Section 202) does not constitute replacement.

Table 106.1W
Exemptions for the Montgomery County Portion of the Watershed

Article or Section	Type of Project	Proposed New Impervious Cover						
		<1000 sq. ft.			≥1000 to <5,000 sq. ft.			≥5,000 sq. ft.
		Earth Disturbance <5,000 sq. ft.	Earth Disturbance >5,000 sq. ft. - 1 acre*	Earth Disturbance > 1 acre	Earth Disturbance <5,000 sq. ft.*	Earth Disturbance >5,000 sq. ft. - 1 acre*	Earth Disturbance > 1 acre	All Earth Disturbance Categories
Article III SWM Site Plan Requirements	Development and Redevelopment	Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt
Section 404 Nonstructural Project Design	Development and Redevelopment	Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt
Section 405 Groundwater Recharge	Development and Redevelopment	Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt
Section 406 Water Volume Control Requirements	Development and Redevelopment	Not Exempt: See Section 1.06	Not Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt
Section 408 Stream Bank Erosion Requirements	Development	Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt	Not Exempt
	Redevelopment		Exempt		Exempt	Exempt		
Section 409 Stormwater Peak Rate Control and Management Districts	Development and Redevelopment	Exempt	Exempt*	Not Exempt	Exempt	Exempt *	Not Exempt	Not Exempt
Erosion and Sediment Pollution Control Plan	Earth Disturbance	See Earth Disturbance Requirements	See Earth Disturbance Requirements	See Earth Disturbance Requirements	See Earth Disturbance Requirements	See Earth Disturbance Requirements	See Earth Disturbance Requirements	See Earth Disturbance Requirements
		(Refer to municipal earth disturbance requirements, as applicable)						

Notes:
Exempt – Exempt unless a determination is made by the municipality that the project is subject to Section 106.C. Not Exempt – Not exempt. All provisions apply.
*Not exempt, but if a municipality has adopted the ordinance for the Small Project SWM Site Plan for Residential Development in Appendix B, such a plan may be submitted in lieu of the SWM Site Plan for residential development.

2. Hotspots

Stormwater Hotspots – Below is a list of types of hotspots that may be recognized by the Municipality. If a site is a potential hotspot, it has important implications for how stormwater is managed. First and foremost, untreated stormwater runoff from hotspots concentrated into a collection system, shall not be recharged into groundwater where it may contaminate water supplies. Therefore, the Rev requirement shall NOT be applied to development sites that lie within a hotspot (the entire WQv must still be treated). Second, a greater level of stormwater treatment shall be applied at hotspot sites to prevent pollutant washoff after construction. The Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) stormwater program requires some industrial sites to prepare and implement a stormwater pollution prevention plan.

List of potential hotspots:

- Vehicle salvage yards and recycling facilities
- Vehicle fueling stations
- Vehicle service and maintenance facilities
- Vehicle and equipment cleaning facilities
- Fleet storage areas (bus, truck, etc.)
- Industrial sites based on Standard Industrial Codes
- Marinas (service and maintenance)
- Outdoor liquid container storage
- Commercial/industrial facilities
- Public works storage areas
- Facilities that generate, transfer, store, or dispose hazardous materials
- Commercial container nursery

The following land uses and activities are not normally considered hotspots:

- Residential streets and rural highways
- Residential development
- Institutional development
- Office developments
- Nonindustrial rooftops
- Pervious areas, except golf courses and nurseries (which may need an integrated pest management (IPM) plan).

3. Rate of Infiltration:

When infiltration is not feasible due to poor infiltration rates or hotspot, the water quality volume must be treated by an approved SMP.

Section 108. Severability

In the event that a court of competent jurisdiction declares any section or provision of this Ordinance invalid, such decision shall not affect the validity of any of the remaining provisions of this Ordinance.

Section 109. Compatibility with Other Ordinances or Legal Requirements

Approvals issued pursuant to this Ordinance do not relieve the Applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable code, rule, act, or Ordinance, including Title 25PA Code, Chapter 92, 102 & 105.

ARTICLE II - DEFINITIONS

Section 201. Interpretation

For the purposes of this Ordinance, certain terms and words used herein shall be interpreted as follows:

A. Words used in the present tense include the future tense; the singular number includes the plural, and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.

B. The word "includes" or "including" shall not limit the term to the specific example, but is intended to extend its meaning to all other instances of like kind and character.

C. The words "**shall**" and "**must**" are **mandatory**; the words "**may**" and "**should**" are **permissive**.

Section 202. Definitions

Accelerated Erosion – The removal of the surface of the land through the combined action of man's activity and the natural processes at a rate greater than that which would occur because of natural process alone.

Agricultural Activities – Activities associated with agriculture such as agricultural cultivation, agricultural operation, and animal heavy use areas. This includes the work of producing crops including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops, mushroom growing, nursery, sod operations and pasturing and raising of livestock and installation of conservation measures. Construction of new buildings or impervious area is not considered an agricultural activity.

Alteration – As applied to land, a change in topography as a result of the moving of soil and rock from one location or position to another; also the changing of surface conditions by causing the surface to be more or less impervious; land disturbance.

Applicant – A landowner, developer or other person who has filed an application to the Municipality for approval to engage in any Regulated Activity at a project site in the Municipality.

Area P – The area of the township that falls within the boundary of the Pennypack Creek Watershed.

Area T – The area of the township that falls within the boundary of the Tookany/Tacony-Frankford Creek Watershed.

Area W – The area of the township that falls within the boundary of the Wissahickon Creek Watershed. Also known locally as the Sandy Run Watershed

Conservation District – A conservation district, as defined in section 3(c) of the Conservation District Law (3 P. S. § 851(c)), that has the authority under a delegation agreement executed with DEP to administer and enforce all or a portion of the regulations promulgated under 25 Pa. Code 102.

Conveyance – A facility or structure used for the transportation or transmission of something from one place to another.

Culvert – A structure with its appurtenant works which carries water under or through an embankment or fill.

Dam – A man-made barrier, together with its appurtenant works, constructed for the purpose of impounding or storing water or another fluid or semifluid. A dam may include a refuse bank, fill, or structure for highway, railroad, or other purposes that impounds or may impound water or another fluid or semifluid.

DEP (or PADEP) - The Pennsylvania Department of Environmental Protection.

Design Storm – The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence that such magnitude will be equaled or exceeded in any one year (e.g., the 20% chance, or so-called 5-year (recurrence interval) storm), and duration (e.g., twenty-four (24) hours), used in the design and evaluation of stormwater management systems. Also see Return Period.

Design Release Rate – The percentage of existing conditions peak rate of runoff from a site or subarea to which the proposed conditions peak rate of runoff must be reduced to protect downstream areas.

Detention Volume - The volume of runoff that is captured and released into the waters of this Commonwealth at a controlled rate.

Detention Basin – An impoundment designed to collect and retard stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate. Detention basins are designed to drain completely soon after a rainfall event, and to become dry until the next rainfall event.

Developer – A person who seeks to undertake any regulated earth disturbance activities at a project site in the Municipality.

Development – Any human-induced change to improved or unimproved real estate, whether public or private, including, but not limited to, land development, construction, installation, or expansion of a building or other structure, land division, street construction, and site alteration such as embankments, dredging, grubbing, grading, paving, parking or storage facilities, excavation, filling, stockpiling, or clearing. As used in this ordinance, development encompasses both new development and redevelopment.

Erosion – The natural process by which the surface of the land is worn away by water, wind or chemical action.

Erosion and Sediment Control Plan – A plan that is designed to minimize accelerated erosion and sedimentation.

Exceptional Value Waters – Surface waters having quality that satisfy one (1) or more of the conditions established in Pennsylvania Code Title 25 Environmental Protection, Chapter 93, Water Quality Standards, §93.4b(b).

Existing Condition – The dominant land cover during the 5-year period immediately preceding a proposed Regulated Activity. If the initial condition of the site is undeveloped land, the land use shall be considered as "meadow" unless the natural land cover is proven to generate a lower curve number (CN) or Rational "c" value, such as forested lands.

FEMA – Federal Emergency Management Agency.

Flood – A temporary condition of partial or complete inundation of land areas from the overflow of streams, rivers, and other waters of this Commonwealth.

Floodplain – Any land area susceptible to inundation by water from any natural source or delineated by applicable FEMA maps and studies as being a special flood hazard area. Included are lands adjoining a river or stream that have been or may be expected to be inundated by a 100-year flood, i.e., the flood of magnitude that has a one (1) percent chance of being equaled or exceeded in any given year. Also included are areas that comprise Group 13 Soils, as listed in Appendix A of the Pennsylvania DEP Technical Manual for Sewage Enforcement Officers (as amended or replaced from time to time by DEP).

Floodway – The channel of a watercourse and those portions of the adjoining floodplains that are reasonably required to carry and discharge the 100-year frequency flood. Unless otherwise specified, the boundary of the floodway is as indicated on Flood Insurance Rate Maps (FIRMs) and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year frequency floodway, it is assumed, absent evidence to the contrary, that the floodway extends fifty (50) feet from the top-of-bank on each side of the stream.

Fluvial Geomorphology – The study of landforms associated with river channels and the processes that form them.

Forest Management/Timber Operations – Planning and associated activities necessary for the management of forest lands. These include timber inventory and preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation, and reforestation.

Impervious Surface (Impervious Area) – A surface that prevents the infiltration of water into the ground. Impervious surfaces (or areas) shall include, but not be limited to, roofs, additional indoor living spaces, patios, garages, storage sheds and similar structures, swimming pools, and any new streets or sidewalks. Decks, parking areas, and driveway areas are not counted as impervious areas if they do not prevent infiltration.

Impoundment – A retention or detention basin designed to retain stormwater runoff and release it at a controlled rate.

Infill – Development that occurs on smaller parcels that has remained undeveloped, but is within or in very close proximity to urban or densely developed areas. Infill development usually relies on existing infrastructure and does not require an extension of water, sewer, or other public utilities.

Infiltration – Movement of surface water into the soil, where it is absorbed by plant roots, evaporated into the atmosphere, or percolated downward to recharge groundwater.

Infiltration basin - A shallow impoundment that is designed to infiltrate stormwater into the soil. Infiltration basins are believed to have a high pollutant removal efficiency, and can also help recharge the groundwater, thus restoring baseflows to stream systems. Infiltration basins can be problematic at many sites because of stringent soil requirements.

Infiltration Structures – A structure designed to direct runoff into the underground water (e.g., French drains, seepage pits, seepage trenches, or infiltration galleries).

Inflow – The flow entering the stormwater management facility and/or BMP.

Inlet – The upstream end of any structure through which water may flow.

Intermittent Stream – A stream that flows only part of the time. Flow generally occurs for several weeks or months in response to seasonal precipitation or groundwater discharge.

Invert – The lowest surface, the floor or bottom of a culvert, drain, sewer, channel, basin, BMP, or orifice.

Karst - A type of topography or landscape characterized by surface depressions, sinkholes, rock pinnacles/uneven bedrock surface, underground drainage and caves. Karst is formed on carbonate rocks, such as limestone or dolomite.

Natural Condition – Pre-development condition.

Natural Hydrologic Regime – See Hydrologic Regime.

Natural Recharge Area – Undisturbed surface area or depression where stormwater collects and a portion of which infiltrates and replenishes the groundwater.

Nonpoint Source Pollution – Pollution that enters a waterbody from diffuse origins in the watershed and does not result from discernible, confined, or discrete conveyances.

Nonstormwater Discharges – Water flowing in stormwater collection facilities, such as pipes or swales, which are not the result of a rainfall event or snowmelt.

Nonstructural Best Management Practice (BMPs) – Methods of controlling stormwater runoff quantity and quality, such as innovative site planning, impervious area and grading reduction, protection of natural depression areas, temporary ponding on site, and other techniques.

NPDES – National Pollutant Discharge Elimination System, the federal government's system for issuance of permits under the Clean Water Act, which is delegated to DEP in Pennsylvania.

NRCS – Natural Resource Conservation Service of the U.S. Department of Agriculture (previously the Soil Conservation Service (SCS)).

O & M Plan - Operation and Maintenance Plan

Open Channel – A conveyance channel that is not enclosed.

Outfall – "Point source" as described in 40 CFR § 122.2 at the point where the Municipality's storm sewer system discharges to Surface Waters of the Commonwealth.

Outflow – The flow exiting the stormwater management facility and/or BMP.

Outlet – Points of water disposal to a stream, river, lake, tidewater, or artificial drain.

Parent Tract – The parcel of land from which a land development or subdivision originates, determined from the date of municipal adoption of this Ordinance.

Parking Lot Storage – Involves the use of parking areas as temporary impoundments with controlled release rates during rainstorms.

Peak Discharge – The maximum rate of stormwater runoff from a specific storm event.

Penn State Runoff Model – The computer based hydrologic model developed at Pennsylvania State University.

Redevelopment – Any development that requires demolition or removal of existing structures or impervious surfaces at a site and replacement with new impervious surfaces. Maintenance activities such as top-layer grinding and re-paving are not considered to be redevelopment. Interior remodeling projects and tenant improvements are also not considered to be redevelopment.

Regulated Activities – Any Earth Disturbance Activities or any activities that involve the alteration or development of land in a manner that may affect stormwater runoff.

Regulated Earth Disturbance Activity – Defined under NPDES Phase II regulations as earth disturbance activity of one (1) acre or more with a point source discharge to surface waters or the Municipality's storm sewer system or five (5) acres or more with or without a point source discharge. This includes earth disturbance on any portion of, or during any stage of, a larger common plan of development. Activity involving earth disturbance subject to regulation under 25 PA Code 92, 25 PA Code 102, or the Clean Streams Law.

Repaving – Replacement of an impervious surface that does not involve reconstruction of an existing paved (impervious) surface (e.g., addition of a new layer of asphalt over an existing paved surface).

Replacement Paving – Reconstruction of and full replacement of an existing paved (impervious) surface (e.g., demolition and removal of surface layer, foundation, and base course; and subsequent reconstruction of the entire sequence).

Retention Volume/Removed Runoff - The volume of runoff that is captured and not released directly into the surface waters of this Commonwealth during or after a storm event.

Return Period – The average interval, in years, within which a storm event of a given or greater magnitude can be expected to recur. For example, the 25-year return period rainfall would be expected to recur on the average of once every twenty-five (25) years, or would have a four (4) percent chance of occurrence or exceedance in any given year.

Riparian Buffer – An area of land adjacent to a body of water and managed to maintain the integrity of stream channels and shorelines to 1) reduce the impact of upland sources of pollution by trapping, filtering, and converting sediments, nutrients, and other chemicals, and 2) supply food, cover and thermal protection to fish and other wildlife.

Riparian Forest Buffer – A type of riparian buffer that consists of permanent vegetation that is predominantly native trees, shrubs, and forbs along surface waters that is maintained in a natural state or sustainably managed to protect and enhance water quality, stabilize stream channels and banks, and separate land use activities from surface waters.

Riser – A vertical pipe extending from the bottom of a pond that is used to control the discharge rate from the pond for a specified design storm.

Standard Grading Permit - The permit required to be issued by the Municipality before any grading activities are allowed to commence on a site within the Municipality. Such permits typically require information including, but not limited to, a contour map of the site showing existing and proposed contours, a plot plan showing streams and drainage courses on or within fifty (50) feet of the site, drainage structures, neighboring streets and alleys, trees, and floodplain zones on or within fifty (50) feet of the site, soil classifications.

State Water Quality Requirements – The regulatory requirements to protect, maintain, reclaim, and restore water quality under Title 25 of the Pennsylvania Code and the Clean Streams Law. This requires protection of designated and existing uses (see 25 Pennsylvania Code Chapters 93 and 96)--including:

A. Each stream segment in Pennsylvania has a "designated use," such as "cold water fishery" or "potable water supply," which is listed in PA Code: Chapter 93 Water Quality Standards. These uses must be protected and maintained under state regulations.

B. "Existing uses" are those attained as of November 1975, regardless of whether they have been designated in Chapter 93. Regulated earth disturbance activities must be designed to protect and maintain existing uses and maintain the level of water quality necessary to protect those uses in all streams and to protect and maintain water quality in special protection streams.

C. Water quality involves the chemical, biological, and physical characteristics of surface water bodies. After regulated earth disturbance activities are complete, these characteristics can be impacted by the addition of pollutants such as sediment and changes in habitat through increased flow volumes and/or rates as a result of changes in land surface area from those activities. Therefore, permanent discharges to surface waters must be managed to protect the stream bank, stream bed, and structural integrity of the waterway to prevent these impacts.

Storage Indication Method – A reservoir routing procedure based on solution of the continuity equation (inflow minus outflow equals the change in storage) with outflow defined as a function of storage volume and depth.

Storm Frequency – The number of times that a given storm "event" occurs or is exceeded on average in a stated period of years (see Return Period).

Storm Sewer – A system of pipes and/or open channels that convey intercepted runoff and stormwater from other sources but exclude domestic sewage and industrial wastes.

Stormwater – Drainage runoff from the surface of the land resulting from precipitation or snow or ice melt.

Stormwater Management District – Those subareas of a watershed in which some type of detention is required to meet the plan requirements and the goals of PA Storm Water Management Act 167.

Time-of-concentration (Tc) – The time required for surface runoff to travel from the hydraulically most distant point of the watershed to a point of interest within the watershed. This time is the combined total of overland flow time and flow time in pipes or channels, if any.

Top-of-bank – Highest point of elevation in a stream channel cross-section at which a rising water level just begins to flow out of the channel and over the floodplain.

Undeveloped Condition – Natural condition (see also Pre-development Condition).

USDA - United States Department of Agriculture.

Vernal Pond – Seasonal depressional wetlands that are covered by shallow water for variable periods from winter to spring but may be completely dry for most of the summer and fall.

Watercourse – A channel or conveyance of surface water having a defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

Water Volume Control (see Section 406) – The storage capacity, in acre-feet, required to capture and treat a portion of stormwater runoff from the developed or redeveloped areas of the site.

Waters of the Commonwealth – Rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs and other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

Watershed – Region or area drained by a river, watercourse or other surface water of the Commonwealth.

Wellhead – 1. A structure built over a well, 2. The source of water for a well.

Wellhead Protection Area – The surface and subsurface area surrounding a water supply well, well field, or spring supplying a public water system through which contaminants are reasonably likely to move toward and reach the water source.

Wet Basin – Pond for urban runoff management that is designed to detain urban runoff and always contains water.

Wetland – Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, fens, and similar areas.

Woods – A natural groundcover with more than one (1) viable tree of a DBH of six (6) inches or greater per fifteen hundred (1,500) square feet which existed within three (3) years of application; a cover condition for which SCS curve numbers have been assigned or to which equivalent Rational Method runoff coefficients have been assigned.

6. An erosion and sediment control plan, including all reviews and letters of adequacy from the Conservation District.

7. A general description of proposed nonpoint source pollution controls.

8. The SWM Site Plan Application and completed fee schedule form and associated fee.

9. The SWM Site Plan Checklist.

10. Appropriate sections from the municipal Subdivision and Land Development Ordinance, and other applicable local ordinances, shall be followed in preparing the SWM Site Plans.

11. The municipality shall not approve any SWM Site Plan that is deficient in meeting the requirements of this Ordinance. At its sole discretion and in accordance with this Article, when a SWM Site Plan is found to be deficient, the municipality may either disapprove the submission and require a resubmission, or in the case of minor deficiencies, the municipality may accept submission of modifications.

12. Provisions for permanent access or maintenance easements for all physical SWM BMPs, such as ponds and infiltration structures, as necessary to implement the Operation and Maintenance (O&M) Plan.

13. The following signature block for the municipality:

14. "(Municipal official or designee), on this date (date of signature), has reviewed and hereby certifies that the SWM Site Plan meets all design standards and criteria of the Municipal Ordinance No. (number assigned to the Ordinance)."

15. All stormwater management facilities must be located on a plan and detailed description of proposed stormwater management techniques, including drainage and construction specifications of the materials to be used for the stormwater management facilities.

B. Maps

Prepare an Existing Resource and Site Analysis Map (ERSAM) showing environmentally sensitive areas including, but not limited to, steep slopes, ponds, lakes, streams, wetlands, hydric soils, vernal pools, stream buffers, floodplains, hydrologic soil groups, closed topographic depressions and recharge areas. Land development, existing recharge areas, and any other requirements specifically outlined in the municipal SALDO also shall be included.

Map(s) of the project area shall be submitted on 24-inch x 36-inch sheets and/or shall be prepared in a form that meets the requirements for recording at the offices of the Recorder of Deeds of Montgomery County. If the SALDO has more stringent criteria than this

15. 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.

16. A north arrow.

17. The total tract boundary and size with distances marked to the nearest hundredth of a foot and bearings to the actual degree, minutes, & second.

18. Existing and proposed land use(s).

19. A key map showing all existing man-made features beyond the property boundary that would be affected by the project.

20. Location of all open channels.

21. Overland drainage patterns and swales.

22. A 15-foot wide access easement around all stormwater management facilities to provide ingress to and egress from a public right-of-way.

23. The location of all erosion and sediment control facilities.

24. 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.

25. A statement, signed by the Applicant, acknowledging that any revision to the approved drainage plan must be approved by the Municipality, and that a revised erosion and sediment control plan must be submitted to the Municipality or Conservation District for approval. *(Required for Modified SWM Site plan, per Table 106.1P)*

26. The following signature block for the Design Engineer:

"I, (Design Engineer), on this date (date of signature), hereby certify that the drainage plan meets all requirements of the Department of Environmental Protection's (DEP's) regulations and this Ordinance."

C. Supplemental Information to be Submitted to the Municipality

1. The following information shall be submitted by the Applicant and shall include:

   a. The overall stormwater management concept for the project designed.
   b. Stormwater runoff computations required by this Ordinance.

2. Two (2) copies to the County Conservation District.

3. The Montgomery County Planning Commission (MCPC) shall be notified by letter regarding submission of the SWM Plan to the municipality and MCCD, and that no plan need be submitted to MCPC.

C. Any submissions to the agencies listed above that are found to be incomplete may not be accepted for review and may be returned to the Applicant with a notification in writing of the manner in which the submission is incomplete.

D. Additional copies shall be submitted as requested by the Municipality, County Conservation District, or DEP.

Section 304. SWM Site Plan Review

A. The SWM Site Plan must be consistent with this Ordinance. If any submissions are found to be incomplete, the municipalities have the option of notifying the applicant and requesting specific information missing from the submission. The application review clock will not start until the municipality has determined that the submission is complete.

B. The Municipality will notify the applicant in writing within 60 days whether the SWM Site Plan is approved or disapproved. If the SWM Site Plan involves a Subdivision and Land Development Plan, the notification period is 90 days. If a longer notification period is provided by other statute, regulation, or ordinance, the applicant will be so notified by the Municipality. If the Municipality disapproves the SWM Site Plan, the Municipality shall cite the reasons for disapproval in writing.

Section 305. Modification of SWM Site Plans

A modification to a submitted SWM Site Plan that involves a change in BMPs or techniques, or that involves the relocation or redesign of BMPs, or that is necessary because soil or other conditions are not as stated on the SWM Site Plan as determined by the Municipality shall require modification and resubmission of the SWM Site Plan in accordance with this Article.

Section 306. Resubmission of Inconsistent or Noncompliant SWM Plans

A disapproved SWM Site Plan may be resubmitted, with the revisions addressing the municipality's concerns, to the municipality in accordance with this Article. The applicable review fees must accompany a resubmission of a disapproved SWM Site Plan.

Section 307. Authorization to Construct and Term of Validity

The municipality's approval of an SWM Site Plan authorizes the regulated activities contained in the SWM Site Plan for a maximum term of validity of 5 years following the date of approval. The

ARTICLE IV - STORMWATER MANAGEMENT

Section 401. General Requirements

A. For any of the activities regulated by this Ordinance, unless preparation of a Stormwater Management (SWM) Site Plan is specifically exempted, the preliminary or final approval of subdivision and/or land development plans, the issuance of any building or occupancy permit, the commencement of any earth disturbance activity may not proceed until the Property Owner or Applicant or his/her agent has received written approval from the Municipality of a SWM Site Plan that demonstrates compliance with the requirements of this Ordinance, and a written approval of an adequate Erosion and Sediment (E&S) Control Plan from the Municipality or County Conservation District when required.

B. SWM Site Plan approved by the municipality shall be on-site throughout the duration of the regulated activity.

C. The municipality may, after consultation with the Department of Environmental Protection (DEP), approve measures for meeting the state water quality requirements other than those in this Ordinance, provided that they meet the minimum requirements of, and do not conflict with, state law including but not limited to the Clean Streams Law.

D. For all regulated earth disturbance activities, E&S control Best Management Practices (BMPs) shall be designed, implemented, operated and maintained during the Regulated Earth Disturbance activities (e.g., during construction) to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code and the Clean Streams Law. DEP regulations require an erosion and sediment control plan for any earth disturbance activity of five thousand (5,000) square feet or more, under 25 Pennsylvania Code § 102.4(b). In addition, under 25 Pennsylvania Code Chapter 92, a DEP "NPDES Construction Activities" Permit is required for regulated earth disturbance activities. A copy of the erosion and sediment control plan and any required permit, as required by DEP regulations, shall be available on the project site at all times. Various BMPs and their design standards are listed in the *Erosion and Sediment Pollution Control Program Manual* (E&S Manual), No. 363-2134-008 (April 15, 2000), as amended and updated. However, the municipality may require E&S controls for projects with lesser areas of earth disturbance

E. For all Regulated Activities, implementation of the water volume controls in Section 406 (Area P & Area W) or Water Quality Requirements in Section 407 (Area T) is required.

F. Impervious areas:

1. The measurement of impervious areas shall include all of the impervious areas in the total proposed development even if development is to take place in stages.

2. For development taking place in stages, the entire development plan must be used in determining conformance with this Ordinance.

L. The design storm precipitation amounts to be used in the analysis of peak rates of discharge shall be those from the upper limits of the 90% confidence intervals for the 24-hour precipitation events in the Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, Version 3.0, U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), Hydrometeorological Design Studies Center (HDSC), Silver Spring, Maryland. NOAA's Atlas 14 can be accessed at http://hdsc.nws.noaa.gov/hdsc/pfds/.

M. For all regulated activities, SWM BMPs shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code, the Clean Streams Law, and the Storm Water Management Act.

N. Various BMPs and their design standards are listed in the BMP Manual[1].

Section 402. Permit Requirements by Other Governmental Entities

Approvals issued and actions taken under this Ordinance do not relieve the Applicant of the responsibility to secure required permits or approvals for activities regulated by any other code, law, regulation or ordinance.

Section 403. Erosion and Sediment Control During Regulated Earth Disturbance Activities

A. Evidence of any necessary permit(s) for regulated earth disturbance activities from theappropriate DEP regional office or County Conservation District must be provided to the Municipality.

B. Additional erosion and sediment control design standards and criteria are recommended to be applied where infiltration BMPs are proposed. They shall include the following:

1. Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase to maintain maximum infiltration capacity.

2. Infiltration BMPs shall not be constructed nor receive runoff until the entire drainage area contributory to the infiltration BMP has achieved final stabilization.

2. The size of the infiltration facility shall be based upon the following volume criteria:

Where practicable and appropriate the recharge volume shall be infiltrated on site. The recharge volume shall be equal to one (1.0) inch of runoff (I) over all proposed impervious surfaces.

The Re_v required shall be computed as:

$$Re_v = (1/12) * (I)$$

Where:
Re_v = Recharge Volume (cubic feet)
I = Impervious Area within the limits of earth disturbance (square feet)

An asterisk (*) in equations denotes multiplication.

B. Soils - A detailed soils evaluation of the project site shall be required to determine the suitability of infiltration facilities. The evaluation shall be performed by a Qualified Person, and at a minimum address soil permeability, depth to bedrock, and subgrade stability. The general process for designing the infiltration BMP shall be:

1. Analyze hydrologic soil groups as well as natural and man-made features within the site to determine general areas of suitability for infiltration practices. In areas where development on fill material is under consideration, conduct geotechnical investigations of sub-grade stability; infiltration may not be ruled out without conducting these tests.

2. Provide field tests such as double ring infiltrometer or hydraulic conductivity tests (at the level of the proposed infiltration surface) to determine the appropriate hydraulic conductivity rate. Percolation tests are not recommended for design purposes.

3. Design the infiltration structure for the required recharge volume (Re_v) based on field determined capacity at the level of the proposed infiltration surface.

4. If on-lot infiltration structures are proposed by the Applicant's Qualified Person, it must be demonstrated to the Municipality that the soils are conducive to infiltrate on the lots identified.

5. An impermeable liner will be required in detention basins where the possibility of groundwater contamination exists. A detailed hydrogeologic investigation may be required by the Municipality.

Section 407. Water Quality Requirements

The Applicant shall comply with the following water quality requirements of this Article.

A. Developed areas shall provide adequate storage and treatment facilities necessary to capture and treat stormwater runoff. The recharge volume computed under Section 403 may be a component of the water quality volume if the Applicant chooses to manage both components in a single facility. If the recharge volume is less than the water quality volume, the remaining water quality volume may be captured and treated by methods other than infiltration Best Management Practices (BMPs). The required water quality volume (WQv) is the storage capacity needed to capture and treat a portion of stormwater runoff from the developed areas of the site.

The following calculation formula is to be used to determine the water quality storage volume (WQv) in cubic feet:

$$WQv = [(P)*(Rv)*(A)]/12$$

Where:

WQv= Water Quality Volume (acre-feet)
P = 1 inch
A=Area of the project contributing to the water quality BMP (acres)
Rv = 0.05 + 0.009(I) where I is the percent of the area that is impervious surface
(Impervious surface/A)*100)

An asterisk (*) in equations denotes multiplication.

For a non-infiltrating BMP, release of water can begin at the start of the storm (i.e., the invert of the water quality orifice is at the invert of the facility). The design of the facility shall provide for protection from clogging and unwanted sedimentation.

Section 408. Stream Bank Erosion Requirements (Channel Protection)

If a perennial or intermittent stream passes through the site, the Applicant shall create a riparian buffer extending a minimum of fifty (50) feet to either side of the top-of-bank of the channel. The buffer area shall be established and maintained in an undisturbed state. This buffer area may be maintained as a meadow with minimal mowing of the grassed area, or as a forested buffer, being planted with appropriate native vegetation (refer to Appendix B of the BMP Manual for plant lists). If the applicable rear or side yard setback is less than fifty (50) feet, the buffer width may be reduced to twenty-five (25) percent of the setback to a minimum of ten (10) feet. If an existing buffer is legally prescribed (i.e., deed, covenant, easement, etc.) and it exceeds the requirements of this Ordinance, the existing buffer shall be maintained. This buffer requirement is for perennial or intermittent streams and does not include lakes or wetlands.

TABLE 409.1P

PEAK RATE CONTROL STANDARDS BY STORMWATER MANAGEMENT DISTRICT IN THE PENNYPACK CREEK WATERSHED

District	Proposed Condition Design Storm		Existing Condition Design Storm
A	2-year	Reduce to	1-year
	5-year		5-year
	10-year		10-year
	25-year		25-year
	50-year		50-year
	100-year		100-year
B	2-year	Reduce to	1-year
	5-year		2-year
	10-year		5-year
	25-year		10-year
	50-year		25-year
	100-year		50-year

C. General - Proposed condition rates of runoff from any regulated activity shall not exceed the peak release rates of runoff from existing conditions for the design storms specified on the Stormwater Management District Watershed Map (Figure 409.1P).

D. District A is shown as the Green Area on Figure 409.1P Area P Management District Watershed Map.

E. District B is shown as the Blue Area on Figure 409.1P Area P Management District Watershed Map.

F. District C is shown as the Pink Arca on Figure 409.1P Area P Management District Watershed Map.

G. District Boundaries - The boundaries of the stormwater management districts are shown on an official map that is available for inspection at the municipal and County Planning offices. A copy of the official map at a reduced scale is included as Figure 409.1P. The exact location of the stormwater management district boundaries as they apply to a given development site shall be determined by mapping the boundaries using the 2-foot topographic contours (or most accurate data required) provided as part of the drainage plan.

H. Sites Located in More than One (1) District - For a proposed development site located within two (2) or more stormwater management districts, the peak discharge rate from any subarea shall meet the management district criteria in which the discharge is located.

I. Off-site Areas - Off-site areas that drain through a proposed development site are not subject to release rate criteria when determining allowable peak runoff rates. However, on-site drainage facilities shall be designed to safely convey off-site flows through the development site.

J. Site Areas - Where the site area to be impacted by a proposed development activity differs significantly from the total site area, only the proposed impact area utilizing stormwater management measures shall be subject to the management district criteria. In other words, unimpacted areas bypassing the stormwater management facilities would not be subject to the management district criteria.

K. Alternate Criteria for Redevelopment Sites - For redevelopment sites, one of the following minimum design parameters shall be accomplished, whichever is most appropriate for the given site conditions as determined by Abington Township;

1. Meet the full requirements specified by Table 409.1P and Sections 409.A(P) through 409.F(P).
   or
2. Reduce the total impervious surface on the site by at least twenty (20) percent based upon a comparison of existing impervious surface to proposed impervious surface.

AREA T

B. The Tookany/Tacony-Frankford Watershed has been divided into stormwater management districts as shown on the Management District Map (Figure 409.1T). Portions of Abington Township are in Districts A and B.

In addition to the requirements specified in Table 409.1T below, the erosion and sedimentation control (Section 403), the nonstructural project design (Section 404), the groundwater recharge (Section 405), the water quality (Section 407), and the stream bank erosion (Section 408) requirements shall be implemented.

Standards for managing runoff from each subarea in the Tookany/Tacony-Frankford Watershed for the 2-, 5-, 10-, 25-, 50-, and 100-year storm events are shown in Table 409.1T. Development sites located in each of the management districts must control proposed condition runoff rates to existing condition runoff rates for the design storms in accordance with Table 409.1T.

FIGURE 409.1T
AREA T MANAGEMENT DISTRICT WATERSHED MAP

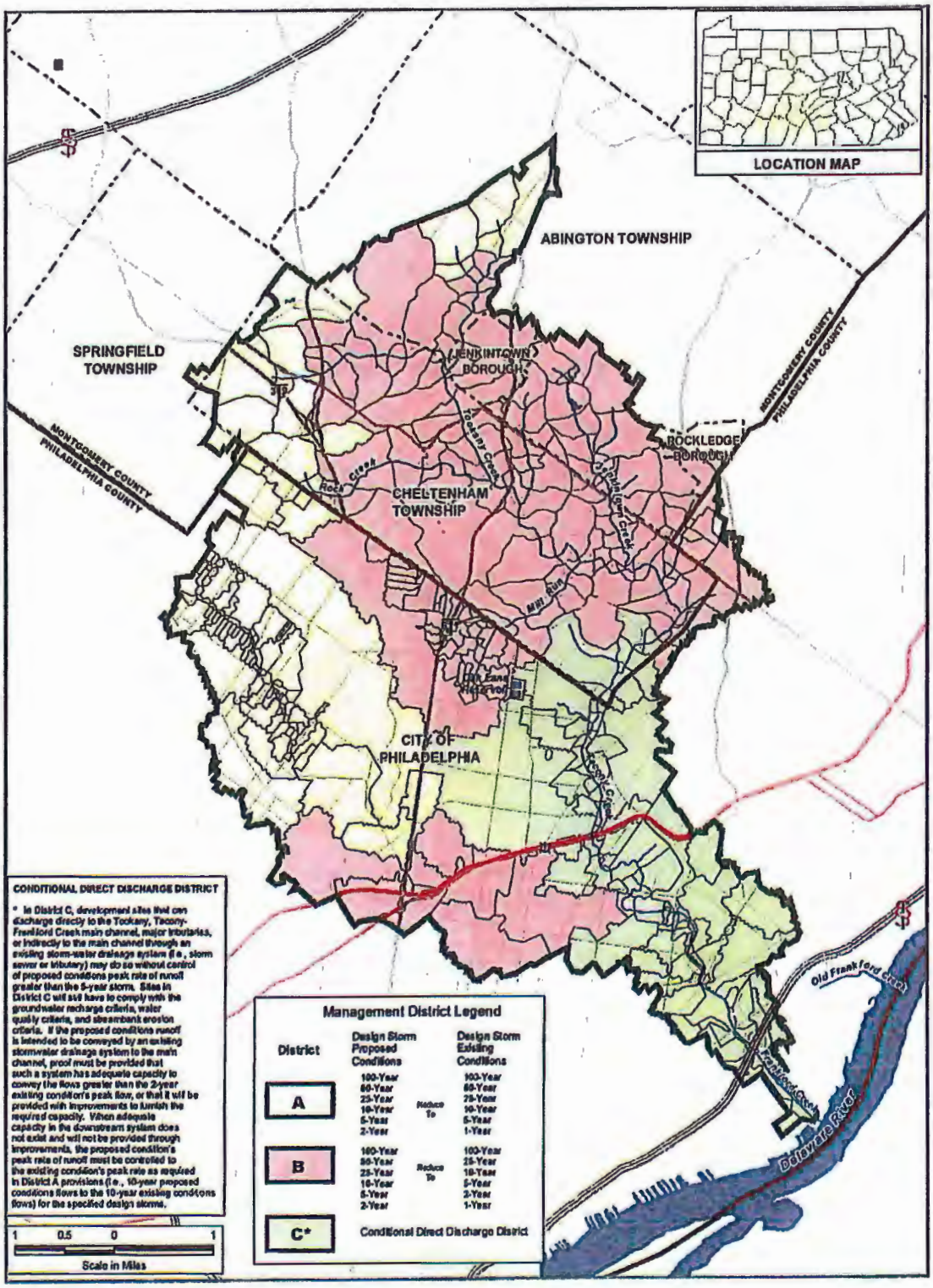


Table 409.1W

PEAK RATE CONTROL STANDARDS BY STORMWATER MANAGEMENT DISTRICT IN THEWISSAHICKON CREEK WATERSHED

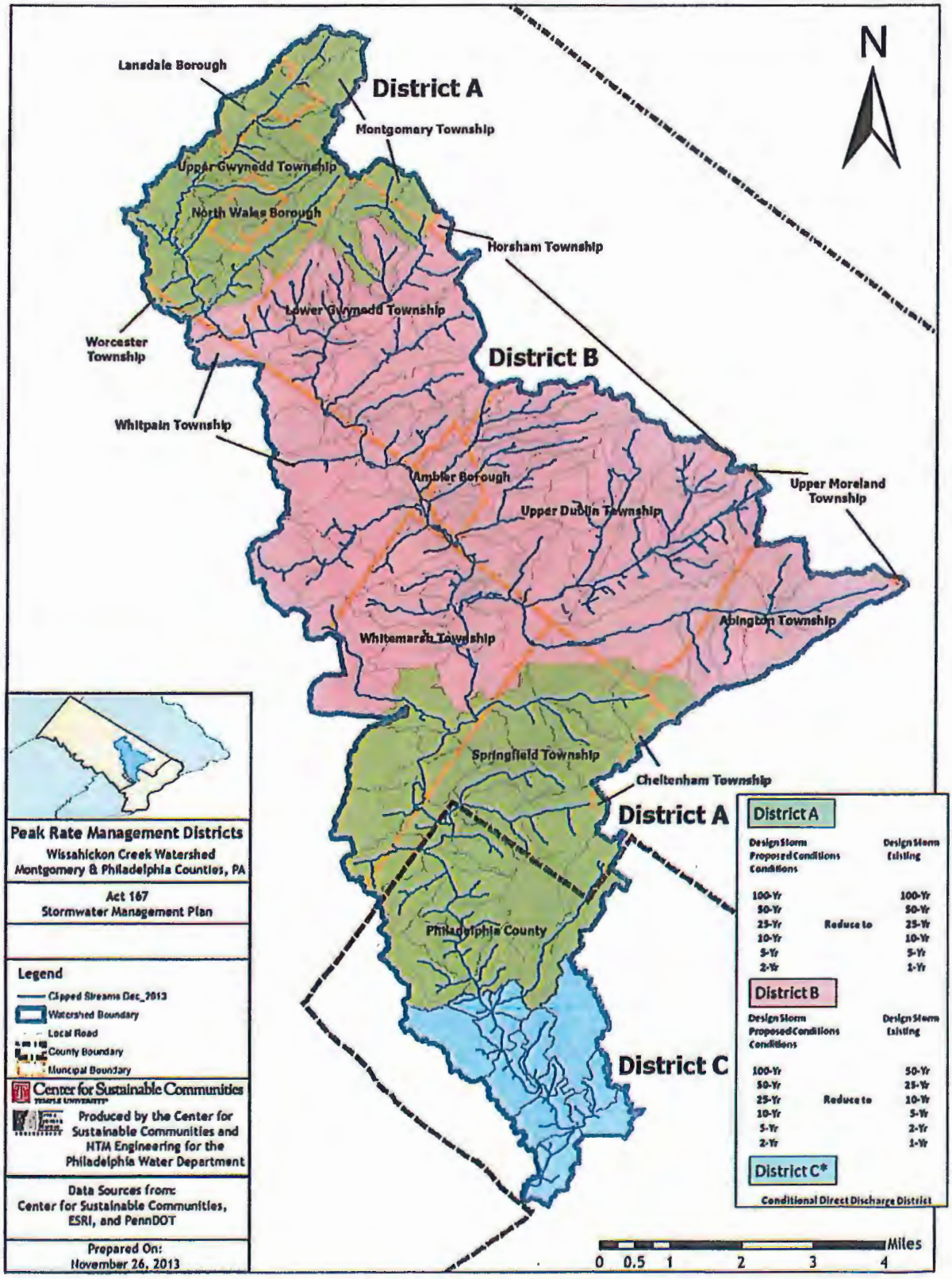
District	Proposed Condition Design Storm		Existing Condition Design Storm
A	2-year	Reduce to	1-year
	5-year		5-year
	10-year		10-year
	25-year		25-year
	50-year		50-year
	100-year		100-year
B	2-year	Reduce to	1-year
	5-year		2-year
	10-year		5-year
	25-year		10-year
	50-year		25-year
	100-year		50-year

B. General - Proposed condition rates of runoff from any regulated activity shall not exceed the peak release rates of runoff from existing conditions for the design storms specified on the Stormwater Management District Watershed Map (Figure 409.1W).

C. District Boundaries - The boundaries of the stormwater management districts are shown on an official map that is available for inspection at the municipal and County Planning offices. A copy of the official map at a reduced scale is included as Figure 409.1W. The exact location of the stormwater management district boundaries as they apply to a given development site shall be determined by mapping the boundaries using the 2-foot topographic contours (or most accurate data required) provided as part of the drainage plan.

D. Sites Located in More than One (1) District - For a proposed development site located within two (2) or more stormwater management districts, the peak discharge rate from any subarea shall meet the management district criteria in which the discharge is located.

Figure 409.1W
Area W Stormwater Management District Watershed Map



C. For the purposes of existing conditions flow rate determination, undeveloped land shall be considered as "meadow", unless the natural ground cover generates a lower curve number or Rational 'C' value (i.e., forest), as listed in Table E-1 or E-2 in Appendix E of this Ordinance.

D. All calculations using the Rational Method shall use rainfall intensities from the NOAA 14 Precipitation-Frequency Atlas of the United States (2004, revised 2006). Times-of-concentration for overland flow shall be calculated using the methodology presented in Chapter 3 of Urban Hydrology for Small Watersheds, NRCS, TR-55 (as amended or replaced from time to time by NRCS). Times-of-concentration for channel and pipe flow shall be computed using flow velocities as determined by Manning's equation. NOAA's Atlas 14 can be accessed at http://hdsc.nws.noaa.gov/hdsc/pfds/.

E. Runoff Curve Numbers (CN) for both existing and proposed conditions to be used in the soil cover complex method shall be obtained from Table E-1 in Appendix E of this Ordinance.

F. Runoff coefficients (c) for both existing and proposed conditions for use in the Rational method shall be obtained from Table E-2 in Appendix E of this Ordinance.

G. The Manning equation is preferred for 1-D, gradually-varied, open channel flow. In other cases, appropriate, applicable methods should be applied, however, early coordination with the municipality is necessary.

H. Outlet structures for stormwater management facilities shall be designed to meet the performance standards of this Ordinance using the generally accepted hydraulic analysis technique or method of the Municipality.

I. The design of any stormwater detention facilities intended to meet the performance standards of this Ordinance shall be verified by routing the design storm hydrograph through these facilities using the Storage-Indication Method. For drainage areas greater than 200 acres in size, the design storm hydrograph shall be computed using a calculation method that produces a full hydrograph. The Municipality may approve the use of any generally accepted full hydrograph approximation technique that shall use a total runoff volume that is consistent with the volume from a method that produces a full hydrograph.

Section 411. Other Requirements

All wet basin designs shall incorporate biologic controls consistent with the West Nile Guidelines found in Appendix D.

ARTICLE VI - FEES AND EXPENSES

Section 601. Municipality SWM Site Plan Review and Inspection Fees

Fees shall be established by the Municipality to defray costs incurred by the Municipality. All fees shall be paid by the Applicant. A fee schedule shall be established by resolution of the municipal Governing Body, which may be based on the size of the Regulated Activity or the Municipality's costs for processing SWM Site Plans and conducting inspections. The Municipality may periodically update the fee schedule to ensure that its costs are adequately reimbursed.

Section 602. Expenses Covered by Fees

The fees authorized by this Ordinance may at a minimum cover:

A. Administrative costs.

B. Review of the SWM Site Plan by the Municipality.

C. Site inspections.

D. Inspection of SWM facilities and drainage improvements during construction.

E. Final inspection at the completion of the construction of the SWM facilities and drainage improvements presented in the SWM Site Plan.

F. Any additional work required to enforce any permit provisions, correct violations, and assure proper completion of necessary remedial actions.

f. The locations of existing and proposed utilities, sanitary sewers, and water lines within fifty (50) feet of property lines of the project site,
g. Proposed final changes to the land surface and vegetative cover, including the type and amount of impervious area that would be added,
h. Proposed final structures, roads, paved areas, and buildings, and
i. A 15 feet wide access easement around all stormwater controls and BMPs that would provide ingress to and egress from a public right-of-way.

2. A description of how each stormwater facility and BMP will be operated and maintained, and the identity and contact information associated with the person(s) responsible for operations and maintenance,

3. The name of the project site, the name and address of the owner of the property, and the name of the individual or firm preparing the plan, and

4. A statement, signed by the landowner, acknowledging that the stormwater facilities and BMPs are fixtures that cannot be altered or removed without prior approval by the Municipality.

D. The stormwater control and BMP O&M Plan for the project site shall establish responsibilities for the continuing O&M of all stormwater facilities and BMPs, as follows:

1. If a plan includes structures or lots that are to be separately owned and in which streets, sewers, and other public improvements are to be dedicated to the Municipality, associated stormwater controls and BMPs also may be dedicated to and maintained by the Municipality;

2. If a plan includes operation and maintenance by a single ownership or if sewers and other public improvements are to be privately owned and maintained, the O&M of stormwater controls and BMPs, and inspections required by permits, shall be the responsibility of the owner or private management entity.

E. The Municipality will make the final determination on the continuing operation and maintenance responsibilities prior to final approval of the Stormwater Management Site Plan. The Municipality reserves the right to accept or reject the O&M responsibility for any or all portions of the stormwater controls and BMPs. The municipality may require a dedication of such facilities as part of the requirements for approval of the SWM Site Plan. Such a requirement is not an indication that the municipality will accept the facilities. The municipality reserves the right to accept or reject the ownership and operating responsibility for any portion of the stormwater management controls.

F. Facilities, areas, or structures used as Stormwater Management BMPs shall be enumerated as permanent real estate appurtenances and recorded as deed restrictions or conservation easements that run with the land.

G. The O&M Plan shall be recorded as a restrictive deed covenant that runs with the land.

Section 705. Stormwater Management Easements

A. The owner must obtain all necessary real estate rights to install, operate, and maintain all stormwater facilities in the SWM Site Plan and the O&M Plan.

B. The owner must provide the municipal easements, or other appropriate real estate rights, to perform inspections and maintenance or the preservation of stormwater runoff conveyance, infiltration, and detention areas.

Section 802. Roof Drains

Roof drains shall not be connected to streets, sanitary or storm sewers, or roadside ditches, and shall discharge to infiltration areas or vegetative BMPs to the maximum extent practicable, except for already existing developed sites where the onsite stormwater system already is designed and equipped to accomplish stormwater rate, quality, and quantity mitigation. The applicant shall, in these cases, submit documentation on the existing stormwater system to the municipal engineer, who shall determine if the stormwater system accomplishes comparable stormwater rate, quality, and quantity mitigation.

In the event that an existing developed site is to be redeveloped, existing roof drains that discharge to an existing stormwater system that is designed and equipped to accomplish stormwater rate, quality, and quantity mitigation, those existing roof drains may remain, provided the applicant submits documentation on the existing stormwater system to the municipal engineer, who shall determine if the stormwater system accomplishes comparable stormwater rate, quality, and quantity mitigation.

Section 803. Alteration of BMPs

A. No person shall modify, remove, fill, landscape, or alter any existing stormwater facility or BMP unless it is part of an approved maintenance program and written approval of the Municipality has been obtained.

B. No person shall place any structure, fill, landscaping, or vegetation into a stormwater control or BMP or within a drainage easement which would limit or alter the functioning of the stormwater control or BMP without the written approval of the Municipality.

4. Abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;

5. Payment of a fine to cover administrative and remediation costs;

6. Implementation of stormwater controls and BMPs; and

7. O&M of stormwater facilities and BMPs.

B. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of those violations(s). If the violator fails to take the required action within the established deadline, the work may be done by the Municipality and the expenses may be charged to the violator.

C. Failure to comply within the time specified may subject a violator to the penalty provisions of this Ordinance. All such penalties shall be deemed cumulative and shall not prevent the Municipality from pursuing other remedies available in law or equity.

Section 904. Suspension and Revocation

A. Any approval or permit issued by the municipality pursuant to this Ordinance may be suspended or revoked for:

1. Non-compliance with or failure to implement any provision of the approved SWM Site Plan or O&M Agreement.

2. A violation of any provision of this Ordinance or any other applicable law, ordinance, rule, or regulation relating to the Regulated Activity.

3. The creation of any condition or the commission of any act during the Regulated Activity which constitutes or creates a hazard, nuisance, pollution, or endangers the life or property of others.

B. A suspended approval may be reinstated by the municipality when:

1. The municipality has inspected and approved the corrections to the violations that caused the suspension.

2. The municipality is satisfied that the violation has been corrected.

C. A permit or approval that has been revoked by the municipality cannot be reinstated. The applicant may apply for a new approval under the provisions of this Ordinance.

D. If a violation causes no immediate danger to life, public health or safety, or property, at its sole discretion, the municipality may provide a limited time period for the owner to correct

ARTICLE X - REFERENCES

1. Pennsylvania Department of Environmental Protection. No. 363-0300-002 (December 2006), as amended and updated. *Pennsylvania Stormwater Best Management Practices Manual.* Harrisburg, PA.

2. Pennsylvania Department of Environmental Protection. No. 363-2134-008 (April 15, 2000), as amended and updated. *Erosion and Sediment Pollution Control Program Manual.* Harrisburg, PA.

3. U.S. Department of Agriculture, National Resources Conservation Service (NRCS). *National Engineering Handbook.* Part 630: Hydrology, 1969-2001. Originally published as the *National Engineering Handbook*, Section 4: Hydrology. Available from the NRCS online at: http://www.nrcs.usda.gov/.

4. U.S. Department of Agriculture, Natural Resources Conservation Service. 1986. *Technical Release 55: Urban Hydrology for Small Watersheds*, 2nd Edition. Washington, D.C.

5. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Hydrometeorological Design Studies Center. 2004-2006. *Precipitation-Frequency Atlas of the United States, Atlas 14*, Volume 2, Version 3.0, Silver Spring, Maryland. Internet address: http://hdsc.nws.noaa.gov/hdsc/pfds/.

ORDINANCE APPENDIX A

SMALL PROJECT STORMWATER MANAGEMENT (SWM) SITE PLAN

This Small Project SWM Site Plan is included as an option for small regulated activities the opportunity to submit a non-engineered stormwater management plan. The requirements of this site plan alternative are consistent with the volume control requirements *Stormwater Management Plan (SMP)*. This site plan can be applied only to development activities proposing less than 5,000 square feet of impervious surface and less than one acre of earth disturbance.

Site Plan Example: Controlling runoff volume from a proposed home site

Step 1: Determine Total Impervious Surfaces

Impervious Surface			**Area (sq. ft.)**
House Roof (Front)	14 ft. x 48 ft.	=	672 sq. ft.
House Roof (Rear)	14 ft. x 48 ft.	=	672 sq. ft.
Garage Roof (Left)	6ft. x 24 ft.	=	144 sq. ft.
Garage Roof (Right)	6 ft. x 24 ft.	=	144 sq. ft.
Driveway	12 ft. x 50 ft.	=	1000 sq. ft.
Walkway	4 ft. x 20 ft.	=	80 sq. ft.

	Total Impervious		3000 sq ft
	Total Earth Disturbance		6000 sq ft

Step 2: Determine Required Volume Control (cubic feet) using the following equation:

Volume (cu. ft.) = (Total impervious area in square feet x 2 inches of runoff) /12 inches

(3,000 sq. ft. x 2 inches of runoff) /12 inches = 500 cu. ft.

Step 3: Sizing the Selected Volume Control BMP

Several Best Management Practices (BMPs), as described below, are suitable for small stormwater management projects. However, their application depends on the volume required to be controlled, how much land is available, and the site constraints. Proposed residential development activities can apply both non-structural and structural BMPs to control the volume of runoff from the site. A number of different volume control BMPs are described below. Note that Figure 1 is an example of how these BMPs can be utilized in conjunction to control the total required volume on one site.

Structural BMPs

1. Infiltration Trench

An Infiltration Trench is a linear stormwater BMP consisting of a continuously perforated pipe at a minimum slope in a stone-filled trench. During small storm events, infiltration trenches can significantly reduce volume and serve in the removal of fine sediments and pollutants. Runoff is stored between the stones and infiltrates through the bottom of the facility and into the soil matrix. Runoff should be pretreated using vegetative buffer strips or swales to limit the amount of coarse sediment entering the trench which can clog and render the trench ineffective. In all cases, an infiltration trench should be designed with a positive overflow.

Design Considerations:

- Although the width and depth can vary, it is recommended that Infiltration Trenches be limited in depth to not more than six (6) feet of stone.
- Trench is wrapped in nonwoven geotextile (top, sides, and bottom).
- Trench needs to be placed on uncompacted soils.
- Slope of the Trench bottom should be level or with a slope no greater than 1%.
- A minimum of 6" of topsoil is placed over trench and vegetated.
- The discharge or overflow from the Infiltration Trench should be properly designed for anticipated flows.
- Cleanouts or inlets should be installed at both ends of the Infiltration Trench and at appropriate intervals to allow access to the perforated pipe.
- Volume of facility = Depth x Width x Length x Void Space of the gravel bed (assume 40%).

Maintenance:

- Catch basins and inlets should be inspected and cleaned at least two times a year.
- The vegetation along the surface of the infiltration trench should be maintained in good condition and any bare spots should be re-vegetated as soon as possible.

Sizing Example for Infiltration Trench

1. Determine Total Impervious Surface to drain to Infiltration Trench:

Garage Roof (Left)	6 ft. x 24 ft.	=	144 sq ft
Driveway	12 ft. x 50 ft.	=	1000 sq ft
Walkway	4 ft. x 20 ft.	=	80 sq ft

2. Determine the required infiltration volume:

   (1224 sq. ft. x 2 inches of runoff)/12 ft. = 204 cu. ft. / 0.4* = 510 cu. ft.
   (*0.4 assumes 40% void ratio in gravel bed)

3. Sizing the infiltration trench facility:

   Volume of Facility = Depth x Width x Length

   Set Depth to 3 feet and determine required surface area of trench.

   510 cu. ft / 3 ft = 170 sq ft.

   The width of the trench should be greater than 2 times its depth (2 x D), therefore in this example the trench width of 6 feet selected.

   Determine trench length: L = 170 sq. ft. / 6 ft. = 28.3 ft.

   Final infiltration trench dimensions: 3 ft. (D) x 6 ft. (W) x 28.3 ft. (L)

2. Rain Garden

A Rain Garden is a planted shallow depression designed to catch and filter rainfall runoff. The garden captures rain from a downspout or a paved surface. The water sinks into the ground, aided by deep rooted plants that like both wet and dry conditions. The ideal location for a rain garden is between the source of runoff (roofs and driveways) and the runoff destination (drains, stream, low spots, etc).

Design Considerations:

- A maximum of 3:1 side slope is recommended.
- The depth of a rain garden can range from 6 - 8 inches. Ponded water should not exceed 6 inches.
- The rain garden should drain within 72 hours.
- The garden should be at least 10-20 feet from a building's foundation and 25 feet from septic system drainfields and wellheads.
- If the site has clay soils, soil should be amended with compost or organic material.
- Choose native plants. See http://pa.audubon.org/habitat/PDFs/RGBrochure_complete.pdf for a native plant list. To find native plant sources go to www.pawildflower.org.

4. Sizing the rain garden:

   For this example the infiltration test determined 6" of water drained out of a hole in 24 hours. The depth of the rain garden should be set to the results of the infiltration test so 6" is the depth of the rain garden. The sizing calculation below is based on controlling 1" of runoff. First divide the impervious surface by the depth of the rain garden.

   (672 sq ft / (1 inch/6 inch).) = 112 sq. ft.

   In order to control 2" of runoff volume, the rain garden area needs to be multiplied by 2.

   1,344 sq. ft. * 2 = 224 sq. ft.

   The rain garden should be about 225 sq. ft. in size and 6" deep.

3. Dry Well (a.k.a., Seepage Pit)

A Dry Well, sometimes called a Seepage Pit, is a subsurface storage facility that temporarily stores and infiltrates stormwater runoff from the roofs of structures. By capturing runoff at the source, Dry Wells can dramatically reduce the increased volume of stormwater generated by the roofs of structures. Roof leaders connect directly into the Dry Well, which may be either an excavated pit filled with uniformly graded aggregate wrapped in geotextile, or a prefabricated storage chamber or pipe segment. Dry Wells discharge the stored runoff via infiltration into the surrounding soils. In the event that the Dry Well is overwhelmed in an intense storm event, an overflow mechanism (surcharge pipe, connection to a larger infiltration are, etc.) will ensure that additional runoff is safely conveyed downstream.

Design Considerations:

- Dry Wells typically consist of 18 to 48 inches of clean washed, uniformly graded aggregate with 40% void capacity (AASHTO No. 3, or similar). "Clean" gravel fill should average one and one-half to three (1.5 – 3.0) inches in diameter.
- Dry Wells are not recommended when their installation would create a significant risk for basement seepage or flooding. In general, 10 - 20 feet of separation is recommended between Dry Wells and building foundations.
- The facility may be either a structural prefabricated chamber or an excavated pit filled with aggregate.
- Depth of dry wells in excess of three-and-a-half (3.5) feet should be avoided unless warranted by soil conditions.
- Stormwater dry wells must never be combined with existing, rehabilitated, or new septic system seepage pits. Discharge of sewage to stormwater dry wells is strictly prohibited.

Maintenance:

- Dry wells should be inspected at least four (4) times annually as well as after large storm events.
- Remove sediment, debris/trash, and any other waste material from a dry well.
- Regularly clean out gutters and ensure proper connections to the dry well.

Non-Structural BMPs

1. Tree Plantings and Preservation

Trees and forests reduce stormwater runoff by capturing and storing rainfall in the canopy and releasing water into the atmosphere through evapotranspiration. Tree roots and leaf litter also create soil conditions that promote the infiltration of rainwater into the soil. In addition, trees and forests reduce pollutants by taking up nutrients and other pollutants from soils and water through their root systems. A development site can reduce runoff volume by planting new trees or by preserving trees which existed on the site prior to development. The volume reduction calculations either determine the cubic feet to be directed to the area under the tree canopy for infiltration or determine a volume reduction credit which can be used to reduce the size of any one of the planned structural BMPs on the site.

Tree Considerations:

- Existing trees must have at least a 4" trunk caliper or larger.
- Existing tree canopy must be within 100 ft. of impervious surfaces.
- A tree canopy is classified as the continuous cover of branches and foliage formed by a single tree or collectively by the crowns of adjacent trees.
- New tree plantings must be at least 6 ft. in height and have a 2" trunk caliper.
- All existing and newly planted trees must be native to Pennsylvania. See http://www.dcnr.state.pa.us/forestry/commontr/commontrees.pdf for a guide book titled *Common Trees of Pennsylvania* for a native tree list.
- When using trees as volume control BMPs, runoff from impervious areas should be directed to drain under the tree canopy.

Determining the required number of planted trees to reduce the runoff volume:

1. Determine contributing impervious surface area:

Garage Roof (Right)	6 ft. x 24 ft.	=	144	ft

2. Calculate the required control volume:

   (144 sq. ft. x 2 inches of runoff) / 12 inches = 24 cu. ft.

3. Determine the number of tree plantings:

   - A newly planted deciduous tree can reduce runoff volume by 6 cu. ft.
   - A newly planted evergreen tree can reduce runoff volume by 10 cu. ft.

   24 cu. ft./ 6 cu. ft. = 4 Deciduous Trees

Determining the volume reduction for preserving existing trees:

Determining the volume reduction by minimizing soil compaction and planting a meadow:

1. Calculate approximate area of preserved meadow:

   ~22 sq. ft. x ~23 sq. ft = 500 sq. ft.

2. Calculate the volume reduction credit by minimizing the soil compaction and planting a lawn/meadow:

   - For Meadow Areas: Volume Reduction (cu. ft.) = (Area of Min. Soil Compaction (sq. ft.) x 1/3 inch of runoff) / 12

     (500 sq. ft. x 1/3 inch of runoff) / 12 = 13.8 cu. ft.

   - For Lawn Areas: Volume Reduction (cu. ft.) = (Area of Min. Soil Compaction (sq. ft.) x 1/4 inch of runoff) / 12

     (500 sq. ft. x 1/4 inch of runoff) / 12 = 10.4 cu. ft.

This volume credit can be used to reduce the size of any one of the structural BMPs on the site. See explanation under the volume credit for preserving existing trees for details.

Alternative BMP to Capture and Reuse Stormwater

Rain Barrels (*Allowable only for certain areas.)

Rain barrels are large containers that collect drainage from roof leaders and temporarily store water to be released to lawns, gardens, and other landscaped areas after the rainfall has ended. Rain barrels to be used should be a minimum of 50 gallons in size. Typical barrels range from 50 and 200 gallons in size. It is not recommended for rain barrels to be used as a volume control BMP because infiltration is not guaranteed after each storm event. For this reason, a rain barrel is not utilized in the site plan example. However, the information is included to provide an alternative for a homeowner to utilize when considering capture and reuse stormwater methods.

Design Considerations:

- Rain barrels should be directly connected to the roof gutter/spout.
- There must be a means to release the water stored between storm events to provide the necessary storage volume for the next storm.
- When calculating rain barrel size, rain barrels are typically assumed to be 25% full because they are not always emptied before the next storm.
- Use screens to filter debris and cover lids to prevent mosquitoes.
- An overflow outlet should be placed a few inches below the top with an overflow pipe to divert flow away from structures.
- It is possible to use a number of rain barrels jointly for an area.
- Are the requirements for the 15foot access easements waived?

4. Size the rain barrel:

   1 cu. ft. = 7. 48 gallons

   12 cu. ft. x 7.48 = 90 gallons
   90 gallons x (0.25*) = 22.5 gallons (*assuming that the rain barrel is always at least 25% full)

   90 gallons + 22.5 gallons = 112 gallons

   The rain barrel or barrels should be large enough to hold at least 112 gallons of water.

REFERENCES:

Center for Watershed Protection and US Forest Service. (2008). *Watershed Forestry Resource Guide*. Retrieved on May 26, 2010 from http://www.forestsforwatersheds.org/reduce-stormwater/.

Department of Environmental Protection. (2006). *Pennsylvania Stormwater Best Management Practices Manual.*

Wissahickon Watershed Partnership. *Pennsylvania Rain Garden Guide*. Retrieved on May 4, 2010 from http://pa.audubon.org/habitat/PDFs/RGBrochure_complete.pdf.

Building a Backyard Rain Garden. North Carolina Cooperative Extension. Retrieved on May 4, 2010 from http://www.bae.ncsu.edu/topic/raingarden/Building.htm

Delaware County Planning Commission. (2010). *Draft Crum Creek Watershed Act 167 Stormwater Management Plan. Ordinance Appendix B. Simplified Approach to Stormwater Management for Small Projects.*

Solebury Township. (2008). *Solebury Township Stormwater Management Ordinance. "Appendix J Simplified Stormwater Management Procedures for Existing Single Family Dwelling Lots"*

DeBarry, Paul A. Watersheds: Processes, Assessment and Management, John Wiley & Sons, Inc, Hoboken, NJ, 2004.

North Carolina Cooperative Extension. Building a Backyard Rain Garden. Retrieved on May 4, 2010 from http://www.bae.ncsu.edu/topic/raingarden/Building.htm

Philadelphia Water Department (2010) Poquessing Creek Act 167 Stormwater Management Plan

SAMPLE DRAINAGE PLAN APPLICATION

(To be attached to the "land subdivision plan or development plan review application" or "minor land subdivision plan review application")

Application is hereby made for review of the Stormwater Management Plan and related data as submitted herewith in accordance with the _____Stormwater Management Ordinance.

_____Final Plan _____Preliminary Plan _____Sketch Plan

Date of Submission _____Submission No._____

1. Name of subdivision or development_____

2. Name of Applicant _____ Telephone No._____

   (if corporation, list the corporation's name and the names of two officers of the corporation)
   _____Officer 1
   _____Officer 2

   Address_____
   Zip_____

   Applicant's interest in subdivision or development
   (if other than property owner, give owner's name and address)

3. Name of property owner _____Telephone No._____

   Address_____
   Zip_____

4. Name of engineer or surveyor _____Telephone No._____

   Address_____
   Zip_____

5. Type of subdivision or development proposed:

____ Single-family Lots	____ Townhouses	____ Commercial (Multi-lot)
____ Two-family Lots	____ Garden Apartments	____ Commercial (One Lot)
____ Multi-family Lots	____ Mobile Home Park	____ Industrial (Multi-lot)
____ Cluster Type Lots	____ Campground	____ Industrial (One Lot)
____ Planned Residential Development	____ Other (_____)	

i. What hydrologic method was used in the stormwater computations?_____
_____

j. Is a hydraulic routing through the stormwater control structure submitted?_____
_____

k. Is a construction schedule or staging attached?_____

l. Is a recommended maintenance program attached?_____

9. Erosion and Sediment Pollution Control (E&S):

a. Has the stormwater management and E&S plan, supporting documentation, and narrative been submitted to the _____[*County Name*]___County Conservation District?_____

b. Total area of earth disturbance _____S.F.

10. Wetlands

a. Have the wetlands been delineated by someone trained in wetland delineation?_____

b. Have the wetland lines been verified by a state or federal permitting authority?_____

c. Have the wetland lines been surveyed?_____

d. Total acreage of wetland within the property _____

e. Total acreage of wetland disturbed_____

f. Supporting documentation_____

11. Filing

a. Has the required fee been submitted?_____

Amount_____

b. Has the proposed schedule of construction inspection to be performed by the Applicant's engineer been submitted?_____

c. Name of individual who will be making the inspections_____

d. General comments about stormwater management at the development_____
_____
_____

ORDINANCE APPENDIX B-2

DRAINAGE PLAN CHECKLIST

ARTICLE IV: STORMWATER MANAGMENT (Continued)

2. Are any of the following Environmentally Sensitive areas identified on site?

Steep Slopes	☐ Yes	☐ No	☐ Unknown
Ponds / Lakes / Vernal Pools	☐ Yes	☐ No	☐ Unknown
Streams	☐ Yes	☐ No	☐ Unknown
Wetlands	☐ Yes	☐ No	☐ Unknown
Hydric Soils	☐ Yes	☐ No	☐ Unknown
Flood plains	☐ Yes	☐ No	☐ Unknown
Stream Buffer Zones	☐ Yes	☐ No	☐ Unknown
Hydrologic Soil Groups A or B	☐ Yes	☐ No	☐ Unknown
Recharge Areas	☐ Yes	☐ No	☐ Unknown
Others: _____	☐ Yes	☐ No	☐ Unknown

3. Does the site layout plan avoid Environmentally Sensitive Areas identified on site?

☐ Yes ☐ No, Explain _____

4. Has a stream buffer been established per Section 406.G.?

☐ Yes ☐ No, Explain _____

ARTICLE IV: STORMWATER MANAGEMENT

Reference: Section 405 Groundwater Recharge

1. Is the proposed activity considered a "Stormwater Hotspot"? ☐ Yes ☐ No

2. Have provisions been installed to promote groundwater recharge on site?

☐ Yes ☐ No, Explain _____

3. Total Recharge Volume Required:_____ cubic feet

4. How is the Required Recharge Volume being addressed?

☐ Infiltration Trench
☐ Infiltration Basin
☐ Bioretention
☐ Dry Swales
☐ Other:_____

ARTICLE IV: STORMWATER MANAGEMENT

Reference: Section 409 Calculation Methodology

1. Which method(s) are utilized in the site stormwater management plan for computing stormwater runoff rates and volumes?

   ☐ TR-20 ☐ PSRM
   ☐ TR-55 ☐ Rational Method
   ☐ HEC-1 / HEC-HMS ☐ Other:_____

2. Was NOAA Atlas 14 utilized in rainfall determination?

   ☐ Yes ☐ No, Explain _____

3. Was Table E-2 (Runoff Curve Numbers) or Table E-3 in the Appendix F (Rational Runoff Coefficients) utilized in calculations for runoff?

   ☐ Yes ☐ No, Explain _____

4. For any proposed stormwater detention facility, were the appropriate design storms routed through the facility using the Storage-Indication Method?

   ☐ Yes ☐ No, Explain _____

ARTICLE IV: STORMWATER MANAGEMENT

Reference: Section 410 Other Requirements

1. Is this project subject to PENNDOT approval?

   ☐ Yes ☐ No

   a. If "YES" have these plans been forwarded to PENNDOT for review?

      ☐ Yes ☐ No, Explain_____

2. Have proposed wet detention basins incorporated biologic control consistent with the West Nile Guidelines presented in Appendix G?

   ☐ Yes ☐ No ☐ Not Applicable

3. Are any proposed stormwater facilities subject to PADEP Chapter 105 permitting?

   ☐ Yes ☐ No

   a. If "YES" have these plans been forwarded to PADEP for review?

      ☐ Yes ☐ No, Explain_____

ORDINANCE APPENDIX B-3

NONSTRUCTURAL PROJECT DESIGN CHECKLIST

The goal of this checklist is to minimize the increases in stormwater runoff and impacts to water quality resulting from the proposed regulated activity:

1. Prepare an Existing Resource and Site Analysis Map (ERSAM, see Section 301.B.)
2. Establish a stream buffer according to Section 407.
3. Prepare a draft project layout avoiding sensitive areas identified in Section 301.
4. Identify site-specific existing conditions drainage areas, discharge points, recharge areas, and hydrologic soil groups A and B (areas conducive to infiltration).
5. Evaluate nonstructural stormwater management alternatives (Section 404):
    a) Minimize earth disturbance.
    b) Minimize clearing operations (vegetation removal)
    c) Minimize impervious surfaces.
    d) Break up large impervious surfaces.
6. Satisfy the groundwater recharge (infiltration) objective (Section 405) and provide for stormwater pretreatment prior to infiltration.
7. Provide for water quality protection in accordance with Section 406 water volume control requirements.
8. Provide stream bank erosion protection in accordance with Section 407 stream bank erosion requirements.
9. Determine into what management district the site falls (Section 408) and conduct an existing conditions runoff analysis.
10. Prepare final project design to maintain existing conditions drainage areas and discharge points, to minimize earth disturbance and impervious surfaces, and, to the maximum extent possible, to ensure that the remaining site development has no surface or point discharge.
11. Conduct a proposed conditions runoff analysis based on the final design that meets the management district requirements (Section 408).
12. Manage any remaining runoff prior to discharge through detention, bioretention, direct discharge, or other structural control.

LOW IMPACT DEVELOPMENT (LID) PRACTICES

ALTERNATIVE APPROACH FOR MANAGING STORMWATER RUNOFF

Natural hydrologic conditions can be altered radically by poorly planned development practices such as introducing unnecessary impervious surfaces, destroying existing drainage swales, constructing unnecessary storm sewers, and changing local topography. A traditional drainage approach of development has been to remove runoff from a site as quickly as possible and capture it in a detention basin. This approach leads ultimately to the degradation of water quality as well as expenditure of additional resources for detaining and managing concentrated runoff at some downstream location.

The recommended alternative approach is to promote practices that will minimize proposed conditions runoff rates and volumes, which will minimize needs for artificial conveyance and storage facilities. To simulate pre-development hydrologic conditions, infiltration is often necessary to offset the loss of infiltration by creation of impervious surfaces. The ability of the ground to infiltrate depends upon the soil types and its conditions.

Preserving natural hydrologic conditions requires careful alternative site design considerations. Site design practices include preserving natural drainage features, minimizing impervious surface area, reducing the hydraulic connectivity of impervious surfaces, and protecting natural depression storage. A well-designed site will contain a mix of all of those features. The following describes various techniques to achieve the alternative approach:

- **Preserving Natural Drainage Features.** Protecting natural drainage features, particularly vegetated drainage swales and channels, is desirable because of their ability to infiltrate and attenuate flows and to filter pollutants. However, this objective is often not accomplished in land development. In fact, commonly held drainage philosophy encourages just the opposite pattern -- streets and adjacent storm sewers are typically located in the natural headwater valleys and swales, thereby replacing natural drainage functions with a completely impervious system. As a result, runoff and pollutants generated from impervious surfaces flow directly into storm sewers with no opportunity for attenuation, infiltration, or filtration. Developments designed to fit site topography also minimize the amount of grading on site.

- **Protecting Natural Depression Storage Areas.** Depressional storage areas either have no surface outlet or drain very slowly following a storm event. They can be commonly seen as ponded areas in farm fields during the wet season or after large runoff events. Traditional development practices eliminate these depressions by filling or draining, thereby obliterating their ability to reduce surface runoff volumes and trap pollutants. The volume and release rate characteristics of depressions should be protected in the design of the development site. The depressions can be protected by simply avoiding the depression or by incorporating its storage as additional capacity in required detention facilities.

- **Avoiding Introduction of Impervious Areas.** Careful site planning should consider reducing impervious coverage to the maximum extent possible. Building footprints,

In summary, a careful consideration of the existing topography and implementation of a combination of the above mentioned techniques may avoid construction of costly stormwater control measures. Benefits include reduced potential for downstream flooding and water quality degradation of receiving streams/water bodies, enhancement of aesthetics, and reduction of development costs. Other benefits include more stable baseflows in receiving streams, improved groundwater recharge, reduced flood flows, reduced pollutant loads, and reduced costs for conveyance and storage.

WEST NILE VIRUS GUIDANCE

(This source is from the Monroe County, PA Conservation District that researched the potential of West Nile Virus problems from BMPs due to a number of calls they were receiving)

Monroe County Conservation District Guidance:
Stormwater Management and West Nile Virus

Source: Brodhead McMichaels Creeks Watershed Act 167 Stormwater Management Ordinance Final Draft 2/23/04

The Monroe County Conservation District recognizes the need to address the problem of nonpoint source pollution impacts caused by runoff from impervious surfaces. The new stormwater policy being integrated into Act 167 stormwater management regulations by the PA Department of Environmental Protection (DEP) will make nonpoint pollution controls an important component of all future plans and updates to existing plans. In addition, to meet post-construction anti-degradation standards under the state National Pollutant Discharge Elimination System (NPDES) permitting program, applicants will be required to employ Best Management Practices (BMPs) to address nonpoint pollution concerns.

Studies conducted throughout the United States have shown that wet basins and in particular constructed wetlands are effective in traditional stormwater management areas such as channel stability and flood control and are one of the most effective ways to remove stormwater pollutants (United States Environmental Protection Agency 1991, Center for Watershed Protection 2000). From Maryland to Oregon, studies have shown that as urbanization and impervious surfaces increase in a watershed, the streams in those watersheds become degraded (CWP 2000). Although there is debate over the threshold of impervious cover when degradation becomes apparent (some studies show as little as 6% while others show closer to 20%), there is agreement that impervious surfaces cause non-point pollution in urban and urbanizing watersheds and that degradation is ensured if stormwater BMPs are not implemented.

Although constructed wetlands and ponds are desirable from a water quality perspective, there may be concerns about the possibility of these stormwater management structures becoming breeding grounds for mosquitoes. The Conservation District feels that although it may be a valid concern, **municipalities should not adopt ordinance provisions prohibiting wet basins for stormwater management.**

Mosquitoes

The questions surrounding mosquito production in wetlands and ponds have intensified in recent years by the outbreak of the mosquito-borne West Nile Virus. As is the case with all vector-borne maladies, the life cycle of West Nile Virus is complicated, traveling from mosquito to bird, back to mosquito, and then to other animals including humans. *Culex pipiens* was identified as the vector species in the first documented cases from New York in 1999. This species is still considered the primary transmitter of the disease across its range. Today there are some 60 species of

Conclusion

The Conservation District understands the pressure faced by municipalities when dealing with multifaceted issues such as stormwater management and encourages the incorporation of water quality management techniques into stormwater designs. As Monroe County continues to grow, conservation design, groundwater recharge, and constructed wetlands and ponds should be among the preferred design options to reduce the impacts of increases in impervious surfaces. When designed and constructed appropriately, the runoff mitigation benefits to the community from these design options will far outweigh their potential to become breeding grounds for mosquitoes.

TABLE E-1
Runoff Curve Numbers
(From NRCS (SCS) TR-55)

LAND USE DESCRIPTION		HYDROLOGIC SOIL GROUP			
		A	B	C	D
Open Space		44	65	77	82
Meadow / Orchard		30	58	71	78
Agricultural		59	71	79	83
Forest		36	60	73	79
Commercial	(85% Impervious)	89	92	94	95
Industrial	(72% Impervious)	81	88	91	93
Institutional	(50% Impervious)	71	82	88	90
Residential					
Average Lot Size	% impervious				
1/8 acre or less*	65	77	85	90	92
1/8 - 1/3 acre	34	59	74	82	87
1/3 - 1 acre	23	53	69	80	85
1 - 4 acres	12	46	66	78	82
Farmstead		59	74	82	86
Smooth Surfaces (Concrete, Asphalt, Gravel or Bare Compacted Soil)		98	98	98	98
Water		98	98	98	98
Mining/Newly Graded Areas (Pervious Areas Only)		77	86	91	94

* Includes Multi-Family Housing unless justified lower density can be provided.
Note: Existing site conditions of bare earth or fallow ground shall be considered as meadow when choosing a CN value.

TABLE E-3

Roughness Coefficients (Manning's "n") For Overland Flow
(U.S. Army Corps Of Engineers, HEC-1 Users Manual)

Surface Description	n		
Dense Growth	0.4	-	0.5
Pasture	0.3	-	0.4
Lawns	0.2	-	0.3
Bluegrass Sod	0.2	-	0.5
Short Grass Prairie	0.1	-	0.2
Sparse Vegetation	0.05	-	0.13
Bare Clay-Loam Soil (eroded)	0.01	-	0.03
Concrete/Asphalt - very shallow depths (less than 1/4 inch)	0.10	-	0.15
- small depths (1/4 inch to several inches)	0.05	-	0.10

Roughness Coefficients (Manning's "n") For Channel Flow

Reach Description	n
Natural stream, clean, straight, no rifts or pools	0.03
Natural stream, clean, winding, some pools or shoals	0.04
Natural stream, winding, pools, shoals, stony with some weeds	0.05
Natural stream, sluggish deep pools and weeds	0.07
Natural stream or swale, very weedy or with timber underbrush	0.10
Concrete pipe, culvert or channel	0.012
Corrugated metal pipe	0.012-0.027(1)
High Density Polyethylene (HDPE) Pipe	
Corrugated	0.021-0.029(2)
Smooth Lined	0.012-0.020(2)

(1) Depending upon type, coating and diameter
(2) Values recommended by the American Concrete Pipe Association, check Manufacturer's recommended value.

FIGURE E-1
Recommendation Chart for Infiltration Stormwater Management BMP's in Carbonate Bedrock

SITE RISK FACTORS	Geology Type	CARBONATE BEDROCK																											
	Effective Soil Thickness	Less than 2 Feet	2 to 4 Feet									Over 4 Feet to 8 Feet										Over 8 Feet							
	Special Geologic Features*	Low/Med-High Buffer	Low Buffer			Medium Buffer			High Buffer			Low Buffer			Medium Buffer			High Buffer			Low Buffer			Medium Buffer			High Buffer		
SITE INVESTIGATION RECOMMENDED		(Unacceptable)	Preliminary			Preliminary			Preliminary			Preliminary			Preliminary			Preliminary			Preliminary			Preliminary			Preliminary		
DESIGN FACTORS	Infiltration Loading Rates (% Increase)**	(Unacceptable)	0-100%	100-300%	300-500%	0-100%	100-300%	300-500%	0-100%	100-300%	300-500%	0-100%	100-300%	300-500%	0-100%	100-300%	300-500%	0-100%	100-300%	300-500%	0-100%	100-300%	300-500%	0-100%	100-300%	300-500%	0-100%	100-300%	300-500%
PROGRAM SUMMARY GUIDANCE ***																													

RECOMMENDED

NOT RECOMMENDED

* Special Geologic Feature Buffer widths are as follows:

Low Buffer is less than 50 feet

Medium Buffer is 50 feet to 100 feet

High Buffer is greater than 100 feet

** Rates greater than 500% not recommended.

*** Assumes adequately permeable soils and lack of natural constraints as required for all infiltration systems.

1 Infiltration systems may be allowed at the determination of the Engineer and/or Geologist, provided that a Detailed Site Investigation is undertaken which confirms nature of rock, location of Special Geologic Features, and adequacy of the buffer between the SGF and the proposed stormwater system(s).

2 In these Special Geologic Features: Low Buffer situations, infiltration systems may be allowed at the determination of the Engineer and/or Geologist, provided that a Detailed Site Investigation is undertaken and a 25 foot buffer from SGFs is maintained.

Source: Little Lehigh Creek Watershed ACT 167 – Stormwater Management Ordinance. May 2004

Natural vegetation must be present throughout the buffer as described in Section 407 of the ordinance. Grassy areas should be managed as meadows or be reforested and should not be mowed as lawn in any part of the buffer. Where existing vegetation is insufficient to protect water quality, additional native species should be planted to enhance the buffer.

Paved trails, if appropriate to the site, are permitted and must be located at least twenty-five (25) feet from the top of the stream bank. In limited instances, paved trails be placed closer to a stream due to topography, or in order to accommodate passive educational and recreational activities, but must always be at least ten (10) feet from the top of the stream bank. Although this can be achieved by diverting the entire trail closer to the stream, more conservative methods should be considered, such as smaller spur trails or loop trails. These smaller trails provide access to the stream, but reduce the total traffic along the sensitive stream bank.

In rare instances where the buffer width is reduced due to zoning setback or geographical constraints, the municipality should strongly consider whether the benefits of a trail outweigh the benefits of a wider buffer.

Signage

The installation of interpretive and educational signage is strongly encouraged along the trail. Signs should point out local natural resources and educate the public on how riparian buffers protect the watershed. There should be minimum disturbance in the vegetated buffer between the trail and the stream. Therefore, all appurtenances (e.g. benches, educational signs, kiosks, fountains, etc.) should be installed on the landward side of the trail, if possible. All appurtenances shall be installed in compliance with federal, state, local, stormwater, floodplain, and other regulations and permitting requirements (e.g. anchoring, etc.)

Parking Areas

New trailheads and trail parking areas shall meet all the infiltration, rate control, and minimum setback requirements of this ordinance. Every effort should be made to coordinate trail access with existing parking areas. Any new parking areas and trailhead clearings should not encroach on the riparian buffer in any way.

Trail Maintenance

The installation and maintenance of all trails should be performed in a manner that minimizes site disturbance and prevents runoff and erosion. Soil disturbance should be avoided if possible. The removal of native trees and other native vegetation should also be kept to a minimum. If large or heavy equipment is required for trail installation, special care should be given not to damage existing trees and tree roots.

ORDINANCE APPENDIX G

REFERENCES

Federal
Stormwater Best Management Practices in an Ultra-Urban Setting: Selection and Monitoring (FHWA) – **http://www.fhwa.dot.gov/environment/ultraurb/3fs1.htm**

USEPA Infiltration Trench Fact Sheet (September 1999) – **http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post.cfm**

Riparian Buffer References

Alliance for the Chesapeake Bay, Pennsylvania Department of Environmental Protection, September 2000. *Forest Buffer Toolkit*, Stream ReLeaf Program.

Penn State College of Agricultural Sciences, 1996. *Establishing Vegetative Buffer Strips Along Streams to Improve Water Quality.* Publication # AGRS-67.

Fike, Jean, June 1999. *Terrestrial & Palustrine Plant Communities of Pennsylvania,* Pennsylvania Natural Diversity Inventory, The Nature Conservancy, Western Pennsylvania Conservancy, and Pennsylvania Department of Conservation and Natural Resources.

Pennsylvania Association of Conservation Districts, Inc., Keystone Chapter, Soil and Water Conservation Society, Pennsylvania Department of Environmental Protection, Natural Resources Conservation Service, 1998. P*ennsylvania Handbook of Best Management Practices for Developing Areas.* Prepared by CH2MHill.

Palone, R. S. and A. H. Todd (eds), 1997. *Chesapeake Bay Riparian Handbook: A Guide for Establishing and Maintaining Riparian Forest Buffers.* Chesapeake Bay Program and Northeastern Area State and Private Forestry. Natural Resources Conservation Service Cooperative State Research Education and Extension Services.

The Federal Interagency Stream Restoration Working Group (FISRWG, 10/1998). *Stream Corridor Restoration Principles, Processes, and Practices.* GPO Item No. 0120-A; SuDocs No. A57.6/2:EN3/PT.653. ISBN-0-934213-59-3. Published October 1998. Revised August 2000.

This Appendix contains worksheets 11, 12, and 13 from Chapter 8 of the Pennsylvania Stormwater Best Management Practices Manual (DEP, 2006). These worksheets are useful for computing expected stormwater pollutant loads for common land uses and for computing the resulting loads after the application of the most common stormwater management BMPs.

WORKSHEET 11. BMPS FOR POLLUTION PREVENTION

Does the site design incorporate the following BMPs to address nitrate pollution? A summary "yes" rating is achieved if at least 2 BMPs are provided across the site. "Provided across the site" is taken to mean that the specifications for that BMP set forward in Chapters 5 and 6 are satisfied.

BMPs FOR POLLUTANT PREVENTION:

	YES	NO
NS BMP 5.4.1 - Protect Sensitive / Special Value Features		
NS BMP 5.4.2 - Protect / Conserve / Enhance Riparian Buffers		
NS BMP 5.4.3 - Protect / Utilize Natural Flow Pathways in Overall Stormwater Planning and Design		
NS BMP 5.5.1 - Cluster Uses at Each Site; Build on the Smallest Area Possible		
NS BMP 5.6.1 - Minimize Total Disturbed Area - Grading		
NS BMP 5.6.2 - Minimize Soil Compaction in Disturbed Areas		
NS BMP 5.6.3 - Re-Vegetate / Re-Forest Disturbed Areas (Native Species)		
NS BMP 5.7.1 - Reduce Street Imperviousness		
NS BMP 5.7.2 - Reduce Parking Imperviousness		
NS BMP 5.8.1 - Rooftop Disconnection		
NS BMP 5.8.2 - Disconnection from Storm Sewers		
NS BMP 5.9.1 - Street Sweeping		
Structural BMP 6.7.1 - Riparian Buffer Restoration		
Structural BMP 6.7.2- Landscape Restoration		
Structural BMP 6.7.3- Soils Amendment and Restoration		

WORKSHEET 13. POLLUTANT REDUCTION THROUGH BMP APPLICATIONS*

** FILL THIS WORKSHEET OUT FOR EACH BMP TYPE WITH DIFFERENT POLLUTANT REMOVAL EFFICIENCIES. SUM POLLUTANT REDUCTION ACHIEVED FOR ALL BMP TYPES ON FINAL SHEET.*

BMP TYPE: _____

DISTURBED AREA CONTROLLED BY THIS BMP TYPE (AC)	

DISTURBED AREAS CONTROLLED BY THIS BMP TYPE:

		POLLUTANT					POLLUTANT LOAD**		
	LAND COVER CLASSIFICATION	TSS EMC *(mg/l)*	TP EMC *(mg/l)*	Nitrate-Nitrite EMC *(mg/l as N)*	COVER (Acres)	RUNOFF VOLUME (AF)	TSS*** (LBS)	TP*** (LBS)	NO_3 (LBS)
Pervious Surfaces	Forest	39	0.15	0.17					
	Meadow	47	0.19	0.3					
	Fertilized Planting Area	55	1.34	0.73					
	Native Planting Area	55	0.40	0.33					
	Lawn, Low-Input	180	0.40	0.44					
	Lawn, High-Input	180	2.22	1.46					
	Golf Course Fairway/Green	305	1.07	1.84					
	Grassed Athletic Field	200	1.07	1.01					
Impervious Surfaces	Rooftop	21	0.13	0.32					
	High Traffic Street / Highway	261	0.40	0.83					
	Medium Traffic Street	113	0.33	0.58					
	Low Traffic / Residential Street	86	0.36	0.47					
	Res. Driveway, Play Courts, etc.	60	0.46	0.47					
	High Traffic Parking Lot	120	0.39	0.60					
	Low Traffic Parking Lot	58	0.15	0.39					
						TOTAL LOAD TO THIS BMP TYPE			
						POLLUTANT REMOVAL EFFICIENCIES FROM TABLE 9-3 (%)			
						POLLUTANT REDUCTION ACHIEVED BY THIS BMP TYPE (LBS)			

POLLUTANT REDUCTION ACHIEVED BY ALL BMP TYPES (LBS)			
REQUIRED REDUCTION FROM WS12 (LBS)			

** Pollutant Load = [EMC, mg/l] X [Volume, AF] X [2.7, Unit Conversion]
*** TSS and TP calculations only required for projects not meeting CG1/CG2 or not controlling less than 90% of the disturbed area

Wayne C. Luker, President
Steven N. Kline, Vice President
Michael LeFevre, Manager
Jay W. Blumenthal, Treasurer

1176 Old York Road Abington PA 19001-3713 Telephone: 267-536-1000

APPLICATION FOR RAIN BARRELS

Engineering Department, Abington Township, PA
267-536-1044

Date:_____

Property
Location:_____

Parcel No.:_____ Owner(s):_____

Applicant Name:_____

Applicant Address:_____

Applicant Phone #:_____

REQUIRMENTS:

- Up to 250 sq. ft. of impervious surface requires **two (2) rain barrels**[1] [2]
- Greater than 250 sq. ft. of impervious surface requires an "Application for Seepage Pits / Dry Well / Rain Gardens"

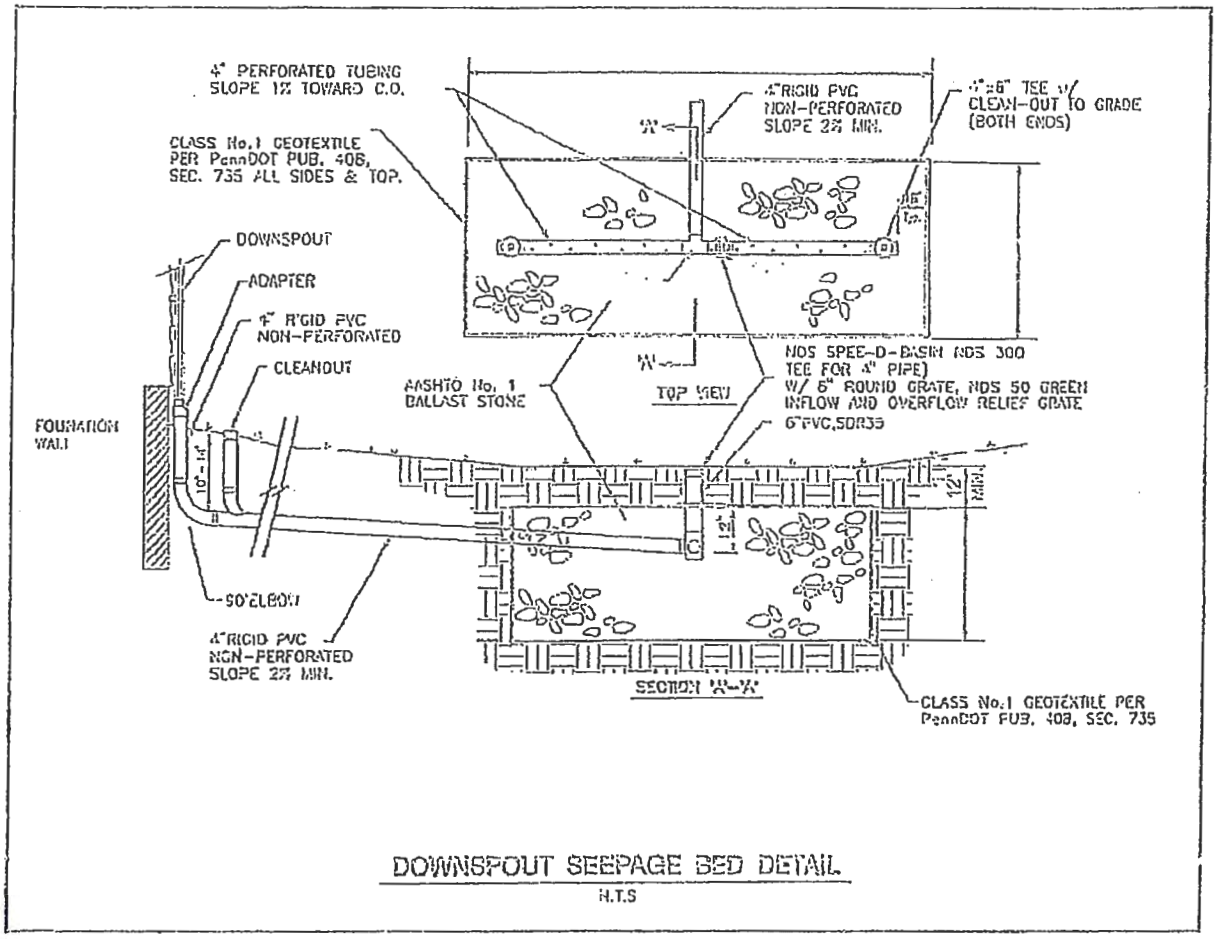
[1] Rain barrels must have a minimum capacity of 50 gallons.
[2] Rain barrels can be purchased at most lawn and garden centers or the Abington Township Environmental Advisory Council (EAC-Abington.org)

Application Fee:	$50.00
Inspection Fee:	$15.00
Total:	$65.00

_____ Engineering Dept.

_____ Applicant

ABINGTON TOWNSHIP STANDARD



DOWNSPOUT SEEPAGE BED DETAIL

N.T.S

KEY DESIGN ELEMENTS

- Should be located downstream from buildings, patios, pools, sheds, etc.
- Maintain a 4 foot distance (min) from all property lines.
- Maintain a 10 foot distance (min.) from building foundations.
- Provide adequate overflow outlet for large storm events.
- Should be constructed on natural, un-compacted soils with acceptable infiltration capacity.
- Wrap aggregate in non-woven geotextile fabric
- At least one observation well or clean out is required

EXAMPLE CALCULATION SHEET

Infiltration Pit / Seepage Pit / Dry Well

1. Area of Improvement (New impervious area)

Length (l):	0	ft	(1)	
Width (w):	0	ft	(2)	
Area (l x w):	250	sf	Multiply (1) x (2)	(3)

2. Calculate Amount of Water to be Handled. (Flow= A x i x c)

Area (A):	250	sf	(3)	
Rain Fall (i):	2	in	(4)	
Rain Fall (i):	0.17	ft	Divide (3)/(4)	(5)
Permiability Coefficient (c):	1.00		(6)	
Amount of Water:	41.67	cf	Multiply (3) x (5) x (6)	(7)

3. Size of Seepage Pit (Filled with AASHTO #4 Stone-40% Void Space)

Void Storage Space Required:	41.67	cf	Equals (7)	
Total Space Required:	104.17	cf	(=(7)/0.4) (% may be adjusted to reflect actual void space)	(8)
With of Pit:	5	ft	(9)	
Length of Pit:	5.5	ft	(10)	
Depth to Overflow:	4	ft	(11)	
Pit Size:	110	cf	(12)	Box (12) should be equal to or greater trhan Box (8)

ORDINANCE APPENDIX J

STORMWATER CONTROLS AND BEST MANAGEMENT PRACTICES OPERATIONS AND MAINTENANCE AGREEMENT

WHEREAS, the Municipality requires, through the implementation of the Plan, that stormwater management BMPs as required by said Plan and the municipal Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, his successors, and assigns.

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The BMPs shall be constructed by the Landowner in accordance with the plans and specifications identified in the Plan.

2. The Landowner shall operate and maintain the BMP(s) as shown on the Plan in good working order acceptable to the Municipality and in accordance with the specific maintenance requirements noted on the Plan.

3. The Landowner hereby grants permission to the Municipality, its authorized agents, and employees to enter upon the property, at reasonable times and upon presentation of proper identification, to inspect the BMP(s) whenever it deems necessary. Whenever possible, the Municipality shall notify the Landowner prior to entering the property.

4. In the event that the Landowner fails to operate and maintain the BMP(s) as shown on the Plan in good working order acceptable to the Municipality, the Municipality or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said BMP(s). This provision shall not be construed to allow the Municipality to erect any permanent structure on the land of the Landowner. It is expressly understood and agreed that the Municipality is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Municipality.

5. In the event that the Municipality, pursuant to this Agreement, performs work of any nature or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Municipality for all expenses (direct and indirect) incurred within ten (10) days of receipt of an invoice from the Municipality.

6. The intent and purpose of this Agreement is to ensure the proper maintenance of the on-site BMP(s) by the Landowner; provided, however, that this Agreement shall not be deemed to create or effect any additional liability on any party for damage alleged to result from or be caused by stormwater runoff.

7. The Landowner, its executors, administrators, assigns, and other successors in interest shall release the Municipality's employees and designated representatives from all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the BMP(s) by the Landowner or Municipality. In the event that a claim is asserted against the Municipality, its designated representatives, or employees, the Municipality shall promptly notify the Landowner, and the Landowner shall defend, at his own expense, any suit based on the claim. If any judgment or claims against the Municipality's employees or designated representatives shall be allowed, the Landowner shall pay all costs and expenses regarding said judgment or claim.

ORDINANCE APPENDIX K

PROPOSED SCHEDULE OF FEES

Code Enforcement and Land Development

BOARD ACTION REQUEST

DECEMBER 2, 2015
~~November 30, 2015~~

CE 3
Agenda Item Number

CODE ENFORCEMENT

TOWNSHIP MANAGER

AGENDA ITEM

Ordinance No. 2102
An Ordinance Amending Chapter 162 – "Zoning" Section 200
Flood Plain Conservation Overlay District

PREVIOUS ACTION

- FEMA is in the process of adopting new FIRM Maps as part of the Revised Flood Plain Regulations.
- Abington Township is required to update the Flood Plain Regulation; last revised in May of 1996.

RECOMMENDED BOARD ACTION

- Motion to advertise a Public Hearing to be held on Thursday, January 14, 2016 at 7:30 pm on Ordinance No. 2102, "The Flood Plain Ordinance."

COMMENTS

- ***Proposed Ordinance 2102 has been taken from the proposed Zoning Ordinance Update, Article XIV. This Section has been placed in a separate Ordinance due to the requirement of FEMA that all Flood Plain Ordinances in the Commonwealth of Pennsylvania be updated by March of 2016.***
- ***Propose Ordinance No 2102 was reviewed by the Abington Township Planning Commission on October 27, 2015. Several grammatical corrections were suggested.***
- ***The revised version of Ordinance No. 2102 is scheduled to be reviewed again by the Abington Planning Commission on Monday, December 14, 2015.***
- ***Proposed Ordinance No. 2102 has been reviewed by Montgomery County Planning Commission as part of the Zoning Ordinance Update that has taken place over the past two years.***
- ***A copy of this Ordinance has been forwarded to Drew Shaw, AICP, Environmental Planning Section Chief, Montgomery County Planning Commission as directed by FEMA.***

TOWNSHIP OF ABINGTON
MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO. #2102

AN ORDINANCE AMENDING CHAPTER 162 – "ZONING," AT SECTION 600 – "FLOOD PLAIN CONSERVATION OVERLAY DISTRICT," BY REPEALING AND REPLACING THE EXISTING PROVISIONS

WHEREAS, the Township of Abington is a Township of the First Class, duly organized and existing pursuant to the applicable laws of the Commonwealth of Pennsylvania; and

WHEREAS, pursuant to section 1502.44 of the First Class Township Code of the Commonwealth of Pennsylvania, 53 P.S. §56544, the Board of Commissioners has the authority to enact and amend provisions of the Abington Township Code ("Code") at any time it deems necessary for the health, safety, morals, general welfare, cleanliness, beauty, convenience and comfort of the Township and the inhabitants thereof; and

WHEREAS, the Board of Commissioners of the Township of Abington has determined that Chapter 162 – "Zoning," Section 600 – "Flood Plain Conservation Overlay District" should be amended by the repeal of the existing provisions and replaced with the provisions attached hereto, incorporated herein and labeled Exhibit "A" for the health, safety, morals, general welfare, cleanliness, beauty, convenience and comfort of the Township and the inhabitants thereof.

NOW, THEREFORE, the Board of Commissioners of the Township of Abington does hereby **ENACT** and **ORDAIN** as follows:

1. Chapter 162 – "Zoning," Section 600 – "Flood Plain Conservation Overlay District" is amended to repeal the existing provisions in their entirety and replacing them with as reflected in Exhibit "A" attached hereto.

2. All other ordinances, portions of ordinances, or any section of the Code inconsistent with this Ordinance are hereby repealed.

3. This Ordinance shall become effective five (5) days after enactment.

ORDAINED AND ENACTED this _____ day of _____, 2015.

TOWNSHIP OF ABINGTON
BOARD OF COMMISSIONERS

Attest:

_____
Michael LeFevre, Secretary

By: _____
Wayne Luker, President

Exhibit
"A"

Article XXVI: FLOODPLAIN CONSERVATION OVERLAY DISTRICT

SECTION 600. Statutory Authorization.

The Legislature of the Commonwealth of Pennsylvania has, by the passage of the Pennsylvania Floodplain Management Act of 1978, delegated the responsibility to local governmental units to adopt floodplain management regulations to promote public health, safety, and the general welfare of its citizenry. Therefore, the Board of Commissioners of Abington Township, does hereby ordain as follows.

SECTION 600.1. Intent.

The intent of this Ordinance is to:

A. Protect areas of the floodplain necessary to contain floodwaters.

B. To permit only those uses in the floodplain that are compatible with preserving existing conditions and stream flow.

C. Promote the general health, welfare, and safety of the community by preventing development in areas prone to flooding.

D. Encourage the utilization of appropriate construction practices, tree-planting, and protection of floodplains in order to prevent or minimize flood damage in the future.

E. Minimize danger to public health by protecting water supply and natural drainage.

F. Reduce financial burdens imposed on the community, its governmental units, and its residents, by preventing excessive development in areas subject to flooding.

G. Comply with federal and state floodplain management requirements.

H. Encourage the utilization of appropriate construction practices in order to prevent or minimize flood damage in the future.

g. Rowland (RwB)
h. Urban Land Occasionally Flooded (UlA)

B. In lieu of the above, the Township may require the applicant to determine the elevation with hydrologic and hydraulic engineering techniques. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough technical review by the Township.

C. The Floodplain Conservation District shall be delineated according to FEMA's Flood Insurance Rate Map (FIRM) for Abington Township which is hereby made a part of this article, and additional area based on soils as described in 600.2.A.2. The FIRM is available for inspection at the Township Office.

D. The Floodplain Conservation District shall be deemed an overlay on any zoning district now or hereafter applicable to any lot.

E. It shall be unlawful for any person, partnership, business or corporation to undertake, or cause to be undertaken, any construction or development anywhere within the Township unless a Permit has been obtained from the Floodplain Administrator.

F. A Permit shall not be required for minor repairs to existing buildings or structures.

SECTION 600.3. Abrogation and Greater Restrictions.

This ordinance supersedes any other conflicting provisions which may be in effect in the Floodplain Conservation District. However, any other ordinance provisions shall remain in full force and effect to the extent that those provisions are more restrictive. If there is any conflict between any of the provisions of this Ordinance, the more restrictive shall apply.

***SECTION 600.4.* Warning and Disclaimer of Liability.**

The degree of flood protection sought by the provisions of this Ordinance is considered reasonable for regulatory purposes and is based on acceptable engineering methods of study. Larger floods may occur or flood heights may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. This Ordinance does not imply that areas outside the Floodplain Conservation District, or that land uses permitted within such areas will be free from flooding or flood damages.

Flood – a temporary inundation of normally dry land areas.

Flood Insurance Rate Map (FIRM) – the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

Flood Insurance Study (FIS) – the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Insurance Rate Map, the Flood Boundary and Floodway Map, and the water surface elevation of the base flood.

Floodplain Area – a relatively flat or low land area which is subject to partial or complete inundation from an adjoining or nearby stream, river or watercourse; and/or any area subject to the unusual and rapid accumulation of surface waters from any source.

Floodproofing – any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents. Floodway – the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

Floodway Fringe – That part of the floodplain adjacent to and extending from the floodway and subject to inundation by the 100-year flood.

Freeboard – A factor of safety usually expressed in feet above a flood level for purposes of floodplain management.

Highest Adjacent Grade -- The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic Structures – any structure that is:

A. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Pennsylvania Historical and Museum Commission (PHMC) as meeting the criteria for individual listing on the National Register;

B. Certified or preliminarily determined by the Pennsylvania Historical and Museum Commission (PHMC) as contributing to the historical significance of a National Register historic district or a district preliminarily determined by the PHMC to be eligible to qualify for listing in the National Register, or;

C. Designated as historic by municipal ordinance:

   1. Identified individually or as part of a local historic district by a zoning ordinance under the authority of the Pennsylvania Municipalities Planning Code; or

Post-FIRM Structure – A structure for which construction or substantial improvement occurred after 12/31/1974, or on or after the community's initial FIRM dated 9/30/1977 whichever is later, and, as such would be required to be compliant with the regulations of the NFIP.

Pre-Firm Structure – A structure for which construction or substantial improvement occurred on or before 12/31/1974, or before the community's initial FIRM dated 9/30/1977, and, as such would not be required to be compliant with the regulations of the NFIP.

Recreational vehicle – a vehicle which is

A. Built on a single chassis;

B. Not more than 400 square feet, measured at the largest horizontal projections;

C. Designed to be self-propelled or permanently towable by a light-duty truck; and

D. Not designed for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Redevelopment Area – A census tract or group of census tracts eligible for the Montgomery County Revitalization Program and identified in the adopted municipal revitalization plan.

Regulatory Flood Elevation – The regulatory flood elevation is the elevation to which development is regulated for purposes of elevation and/or dry floodproofing. It is equal to the base flood elevation (BFE) plus a freeboard of two (2) feet.

Repetitive Loss – flood related damages sustained by a structure on two or more separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on average, equals or exceeds 25 percent of the market value of the structure before the damages occurred.

Special Permit – a special approval which is required for hospitals, nursing homes, jails, and new manufactured home parks and subdivisions and substantial improvements to such existing parks, when such development is located in all, or a designated portion of a floodplain.

Special Flood Hazard Area (SFHA) – means an area in the floodplain subject to a 1 percent or greater chance of flooding in any given year. It is shown on the FIRM as Zone A, AO, A1-A30, AE, A99, or, AH.

Special Floodplain Area – the areas identified as Zone AE in the Flood Insurance Study, where 100-year flood elevations have been provided, but no floodway has been delineated.

Start of Construction – includes substantial improvement and other proposed new development and means the date the Permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days

Violation – means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in 44 CFR §60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) (Floodplain Management Criteria for Flood-Prone Areas) is presumed to be in violation until such time as that documentation is provided.

SECTION 600.6. Identification of Floodplain Areas.

600.6.1. Identification.

The Floodplain Conservation District shall be any areas of the Township classified as special flood hazard areas (SFHAs) in the Flood Insurance Study (FIS) and the accompanying Flood Insurance Rate Maps (FIRMs) to be added and issued by the Federal Emergency Management Agency (FEMA), or the most recent revision thereof, including all digital data developed as part of the Flood Insurance Study. The Floodplain Conservation District shall also include areas with soils listed in 600.2.C, along with any community identified flood hazard areas.

The above referenced FIS and FIRMs, and any subsequent revisions and amendments are hereby adopted by the Township and declared to be a part of this ordinance.

600.6.2. Description and Special Requirements of the Floodplain Conservation District.

The Floodplain Conservation District shall consist of the following specific areas/districts:

A. The Floodway Area/District shall be those areas identified as Floodway on the FIRM as well as those floodway areas which have been identified in other available studies or sources of information for those special floodplain areas where no floodway has been identified in the FIS. The floodway represents the channel of a watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation by more than one foot (1') at any point.

1. Within any floodway area, no encroachments, including fill, new construction, substantial Improvements, or other development shall be permitted unless it has been demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.

2. Construction causing a rise of two feet (2') or more in the BFE shall be prohibited.

and three feet. In Zones AO and AH, drainage paths shall be established to guide floodwaters around and away from structures on slopes.

600.6.3. Changes in Identification of Area.

The Floodplain Conservation District may be revised or modified by the Township Board of Commissioners where studies or information provided by a qualified agency or person documents the need for such revision. However, prior to any such change, approval must be obtained from the FEMA. Additionally, as soon as practicable, but not later than six (6) months after the date such information becomes available, a community shall notify FEMA of the changes by submitting technical or scientific data.

600.6.4. Boundary Disputes.

Should a dispute concerning any identified floodplain boundary arise, an initial determination shall be made by the Abington Engineer and any party aggrieved by this decision or determination may appeal to Township Board of Commissioners. The burden of proof shall be on the appellant.

600.6.5. Corporate Boundary Changes.

Prior to development occurring in areas where annexation or other corporate boundary changes are proposed or have occurred, the community shall review flood hazard data affecting the lands subject to boundary changes. The community shall adopt and enforce floodplain regulations in areas subject to annexation or corporate boundary changes which meet or exceed those in 44 CFR §60.3.: Floodplain Management Criteria for Floodplain Areas.

SECTION 600.7. Uses Permitted in the Floodplain Conservation District

600.7.1. Uses Permitted by Right.

The following uses are permitted by right in the floodplain Conservation District in compliance with the requirements of this Article:

A. Open space uses that are primarily passive in character shall be permitted to extend into the floodplain including:

1. Wildlife sanctuaries, nature preserves, forest preserves, fishing areas, passive areas of public and private parklands, and reforestation.

2. Recreation trails.

3. Streambank stabilization.

F. Clearing of all existing vegetation, except where such clearing is necessary to prepare land for a use permitted under 600.7.1 herein, and where the effects of these actions are mitigated by re-establishment of vegetation.

G. Use of fertilizers, pesticides, herbicides, and/or other chemicals in excess of prescribed industry standards.

H. Roads or driveways, except where permitted as corridor crossings in compliance with 600.7.2 herein.

I. Motor or wheeled vehicle traffic in any area not designed to accommodate adequately the type and volume.

J. Parking lots.

K. Subsurface sewage disposal areas.

L. Sod farming.

M. Stormwater basins, including necessary berms and outfall facilities.

N. All freestanding structures and buildings and retaining walls, with the exception of flood retention dams, culverts, and bridges, as approved by the Pennsylvania Department of Environmental Protection.

O. Sanitary landfills, dumps, junkyards, outdoor storage of vehicles and materials.

P. Private water supply wells.

SECTION 600.8. Nonconforming Structures and Uses in the Floodplain District.

The provisions of this Ordinance do not require any changes or improvements to be made to lawfully existing structures. However, when an improvement is made to any existing structure, the provisions of 600.9 of this ordinance, and the provisions of the Abington Township Zoning Code shall apply.

SECTION 600.9. Improvements to Existing Structures in the Floodplain Conservation District.

The following provisions shall apply whenever any improvement is made to an existing structure located within the Floodplain Conservation District:

A. No expansion or enlargement of an existing structure shall be allowed within any floodway area that would cause any increase in the elevation of the base flood elevation.

B. No variance or special exception shall be granted for any construction, development, use, or activity within any floodway area that would cause any increase in the BFE.

C. No variance or special exception shall be granted for any construction, development, use, or activity within any AE Area/District without floodway that would, together with all other existing and anticipated development, increase the BFE more than one (1) foot at any point.

D. No variance or special exception shall be granted for any of the other requirements pertaining specifically to development regulated by 600.10.3 or 600.11.3.A.

E. The Zoning Hearing Board shall hold a public hearing within 60 days after an application is filed.

F. The effect of the use shall not substantially alter the cross-sectional profile of the streams and floodplains at the location of the proposed use.

G. Lands abutting the waterway, both upstream and downstream, shall not be unreasonably affected by the proposed use.

H. The general welfare or public interest of Abington Township or of other municipalities in the same watershed shall not be adversely affected.

I. Any structures permitted by special exception or variance shall be constructed and placed on the lot so as to offer the minimum obstruction to the flow of water and shall be designed to have a minimum effect upon the flow and height of floodwater. All new construction shall have the lowest floor, including the basement, elevated to two (2) feet above the BFE.

J. Any structures permitted by special exception or variance shall include appropriate flood-proofing measures, including those required by the Township Building Code, as amended to date of application, and the provisions of this Article.

K. Affirmative decisions shall only be issued upon determination that it is the minimum necessary, considering the flood hazard, to afford relief. An affirmative decision shall not be issued by the Zoning Hearing Board within the designated floodway if any increase in the flood levels during the base flood discharge would result. An affirmative decision by the Township Zoning Hearing Board within the Special Floodplain District shall not be granted if the activity, construction, development, or use should cause an increase of two (2) feet or more in the BFE.

Department of Housing and Urban Development's Permanent Foundations for Manufactured Housing, 1984 Edition, draft or latest revision thereto, and the Pennsylvania Uniform Construction Code, 35 P.S. §§7210.101 - 7210.1103, as amended from time to time, including but not limited to the most recent version of the International Residential Code, as adopted or hereinafter amended by the Township of Abington shall apply.

D. Consideration shall be given to the installation requirements of the Pennsylvania Code, 34 Pa. Code Chapters 401-405, as amended from time to time, and the Pennsylvania Uniform Construction Code, 35 P.S. §§7210.101 - 7210.1103, as amended from time to time, including but not limited to the most recent versions of the International Building Code and International Residential Code, as adopted or hereinafter amended by the Township of Abington, where appropriate and/or applicable to units where the manufacturers' standards for anchoring cannot be provided or were not established for the proposed installation.

600.10.5. Special Requirements for Recreational Vehicles

Recreational vehicles in Zones A1-30, AH and AE must either be:

A. On the site for fewer than 180 consecutive days and consistent with the accessory use regulations found within the Abington Township Zoning Code, and

B. Be fully licensed and ready for highway use, or

C. Meet the permit requirements for manufactured homes in 600.10.4.

600.10.6. Variance Conditions

A. If granted, a variance shall involve only the least modification necessary to provide relief.

B. In granting any variance, the Zoning Hearing Board shall attach the reasonable conditions and safeguards outlined herein. These conditions and safeguards are necessary in order to protect the public health, safety, and welfare of the residents of the Township.

C. Whenever a variance is granted, the Zoning Hearing Board shall notify the applicant in writing that:

1. The granting of the variance may result in increased premium rates for flood insurance.

2. Such variances may increase the risks to life and property.

SECTION 600.11. Technical Provisions in the Event of a Variance Being Granted

600.11.1. General.

In granting any variance, Abington Township shall attach the following technical provisions to the proposal for which the variance has been granted. These conditions and safeguards are necessary in order to protect the public health, safety, and welfare of the residents of the Township.

A. Pertaining To the Alteration or Relocation of Watercourse.

1. No encroachment, alteration, or improvement of any kind shall be made to any watercourse until all adjacent municipalities which may be affected by such action have been notified by the Township, and until all required permits or approvals have been first obtained from the Department of Environmental Protection Regional Office.

2. No encroachment, alteration, or improvement of any kind shall be made to any watercourse unless it can be shown that the activity will not reduce or impede the flood carrying capacity of the watercourse in any way.

3. In addition, FEMA and Pennsylvania Department of Community and Economic Development (DCED), shall be notified prior to any alteration or relocation of any watercourse.

B. The Township shall require technical or scientific data to be submitted to FEMA for a Letter of Map Revision (LOMR) within six (6) months of the completion of any new construction, development, or other activity resulting in changes in the BFE. An LOMR or Conditional Letter of Map Revision (CLOMR) is required for:

1. Any development that causes a rise in the base flood elevations within the floodway; or

2. Any development occurring in Zones A1-30 and Zone AE without a designated floodway, which will cause a rise of one (1) foot or more in the base flood elevation; or

3. Alteration or relocation of a stream (including but not limited to installing culverts and bridges).

C. Any new construction, development, uses or activities allowed by variance within the Floodplain Conservation District shall be undertaken in strict compliance with the provisions contained in this Ordinance and any other applicable codes, ordinances and regulations. In addition, when such development is proposed within the area measured fifty (50) feet landward from the top of bank of any

B. Nonresidential Structures

1. In AE, A1-30 and AH Zones, any new construction or substantial improvement of a nonresidential structure shall have the lowest floor (including basement) elevated up to, or above, the regulatory flood elevation, or be designed and constructed so that the space enclosed below the regulatory flood elevation:

   a. is floodproofed so that the structure is watertight with walls substantially impermeable to the passage of water and,

   b. has structural components with the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

2. In A Zones, where no Base Flood Elevations are specified on the FIRM, any new construction or substantial improvement shall have the lowest floor (including basement) elevated or completely floodproofed up to, or above, the regulatory flood elevation determined in accordance with 600.6.2 of this ordinance.

3. In the AO Apartment Office District, any new construction or substantial improvement shall have their lowest floor elevated or completely floodproofed above the highest adjacent grade to at least as high as the depth number specified on the FIRM.

4. Any nonresidential structure, or part thereof, made watertight below the regulatory flood elevation shall be floodproofed in accordance with the WI or W2 space classification standards contained in the publication entitled "Flood-Proofing Regulations" published by the U.S. Army Corps of Engineers (June 1972, as amended March 1992) or with some other equivalent standard. All plans and specifications for such floodproofing shall be accompanied by a statement certified by a registered professional engineer or architect which states that the proposed design and methods of construction are in conformance with the above referenced standards.

C. The design and construction standards and specifications contained in the Pennsylvania Code, 34 Pa. Code Chapters 401-405, as amended from time to time, and the Pennsylvania Uniform Construction Code, 35 P.S. §§7210.101 - 7210.1103, as amended from time to time, including but not limited to the most recent versions of the International Building Code and International Residential Code, as adopted or hereinafter amended by the Township of Abington and ASCE Standard 24 shall be used.

8. The structure shall be adequately anchored to prevent flotation or movement and shall be designed to automatically provide for the entry and exit of floodwater for the purpose of equalizing hydrostatic forces on the walls. Designs for meeting this requirement must either be certified by a registered professional engineer or architect, or meet or exceed the following minimum criteria:

    a. A minimum of two openings having a net total area of not less than one (1) square inch for every square foot of enclosed space.

        1) The bottom of all openings shall be no higher than one (1) foot above grade.

        2) Openings may be equipped with screens, louvers, etc. or other coverings or devices provided that they not inhibit the automatic entry and exit of flood waters.

600.11.3. Special Technical Requirements (in the Event of a Variance Being Granted)

A. Development Which May Endanger Human Life. In accordance with the Pennsylvania Floodplain Management Act, and the regulations adopted by the Department of Community and Economic Development (DCED) as required by the Act, any new or substantially improved structure which will be used for the production or storage of any of the following dangerous materials or substances; or, will be used for any activity requiring the maintenance of a supply of more than 550 gallons, or other comparable volume, of any of the following dangerous materials or substances on the premises; or, will involve the production, storage, or use of any amount of radioactive substances; shall be subject to the provisions of this section, in addition to all other applicable provisions. The following list of materials and substances are considered dangerous to human life:

1. Acetone
2. Ammonia
3. Benzene
4. Calcium carbide
5. Carbon disulfide
6. Celluloid
7. Chlorine
8. Hydrochloric acid
9. Hydrocyanic acid
10. Magnesium
11. Nitric acid and oxides of nitrogen
12. Petroleum products (gasoline, fuel oil, etc.)
13. Phosphorus
14. Potassium
15. Sodium

ensure proper drainage along streets, and provide positive drainage away from buildings. The system shall also be designed to prevent the discharge of excess runoff onto adjacent properties.

C. Water and Sanitary Sewer Facilities and Systems

1. All new or replacement water supply and sanitary sewer facilities and systems shall be located, designed and constructed to minimize or eliminate flood damages and the infiltration of flood waters.

2. Sanitary sewer facilities and systems shall be designed to prevent the discharge of untreated sewage into flood waters.

3. No part of any on-site sewage system shall be located within any Floodplain Conservation District except in strict compliance with all State and local regulations for such systems. If any such system is permitted, it shall be located so as to avoid impairment to it, or contamination from it, during a flood.

4. The design and construction provisions of the UCC and FEMA #348, Protecting Building Utilities from Flood Damages and The International Private Sewage Disposal Code shall be utilized.

D. Other Utilities. All other utilities such as gas lines, electrical and telephone systems shall be located, elevated (where possible) and constructed to minimize the chance of impairment during a flood.

E. Streets. The finished elevation of all new streets shall be no more than one foot (1') below the Regulatory Flood Elevation.

F. Storage. All materials that are buoyant, flammable, explosive, or in times of flooding could be injurious to human, animal, or plant life, and not listed in 600.11.3.A, shall be stored at or above the Regulatory Flood Elevation and/or flood proofed to the maximum extent possible.

G. Placement of Buildings and Structures. All buildings and structures shall be designed, located, and constructed so as to offer the minimum obstruction to the flow of water and shall be designed to have a minimal effect upon the flow and height of flood water.

H. Anchoring

1. All buildings and structures shall be firmly anchored in accordance with accepted engineering practices to prevent flotation, collapse, or lateral movement.

into flood waters. Additional provisions shall be made for the drainage of these systems in the event that flood water infiltration occurs.

N. Uniform Construction Code Coordination. The Standards and Specifications contained in the Pennsylvania Code, 34 Pa. Code Chapters 401-405, as amended from time to time, and the Pennsylvania Uniform Construction Code, 35 P.S. §§7210.101 - 7210.1103, as amended from time to time, including but not limited to the most recent versions of the International Building Code and International Residential Code, as adopted or hereinafter amended by the Township of Abington shall apply to the above and other sections and sub-sections of this ordinance to the extent that they are more restrictive and/or supplement the requirements of this ordinance.

SECTION 600.12. Activities Requiring Special Permits.

600.12.1. General.

In accordance with the administrative regulations promulgated by the Department of Community and Economic Development (DCED) to implement the Pennsylvania Floodplain Management Act, the activities indicated in 600.12.1.A and 600.12.1.B below shall be prohibited within the Floodplain Conservation District unless a Special Permit has been issued by the Township. In order to apply for a special permit, a variance must first be obtained, as outlined in Section 600.10: Variances.

A. The commencement of any of the following activities; or the construction enlargement, or expansion of any structure used, or intended to be used, for any of the following activities:

1. Hospitals

2. Nursing homes

3. Jails or prisons

B. The commencement of, or any construction of, a new manufactured home park or manufactured home subdivision, or substantial improvement to an existing manufactured home park or manufactured home subdivision.

600.12.2. Application Requirements for Special Permits

Applicants for Special Permits shall provide five copies of the following items:

A. A written request including a completed Special Permit Application Form.

B. A small scale map showing the vicinity in which the proposed site is located.

5. Cross section drawings for all proposed streets, drives, other access ways, and parking areas, showing all rights-of-way and pavement widths;

6. Profile drawings for all proposed streets, drives, and vehicular access ways including existing and proposed grades; and

7. Plans and profiles of all proposed sanitary and storm sewer systems, water supply systems, and any other utilities and facilities.

E. The following data and documentation:

1. Certification from the applicant that the site upon which the activity or development is proposed is an existing separate and single parcel, owned by the applicant or the client he represents;

2. Certification from a registered professional engineer, architect, or landscape architect that the proposed construction has been adequately designed to protect against damage from the base flood elevation;

3. A statement, certified by a registered professional engineer, architect, landscape architect, or other qualified person which contains a complete and accurate description of the nature and extent of pollution that might possibly occur from the development during the course of a base flood elevation, including a statement concerning the effects such pollution may have on human life;

4. A statement certified by a registered professional engineer, architect, or landscape architect, which contains a complete and accurate description of the effects the proposed development will have on base flood elevation elevations and flows;

5. A statement, certified by a registered professional engineer, architect, or landscape architect, which contains a complete and accurate description of the kinds and amounts of any loose buoyant materials or debris that may possibly exist or be located on the site below the base flood elevation and the effects such materials and debris may have on base flood elevation elevations and flows;

6. The appropriate component of the Department of Environmental Protection's (DEP's) "Planning Module for Land Development;"

7. Where any excavation or grading is proposed, a plan meeting the requirements of the Department of Environmental Protection to implement and maintain erosion and sedimentation control;

600.12.4. Special Technical Requirements (for Proposed Developments Requiring a Special Permit)

A. In addition to the requirements of Section 600.11 hereof, the following minimum requirements shall also apply to any proposed development requiring a Special Permit. If there is any conflict between any of the following requirements and those in Section 600.6 of this Ordinance or in any other code, ordinance, or regulation, the more restrictive provision shall apply.

B. No application for a Special Permit shall be approved unless it can be determined that the structure or activity will be located, constructed and maintained in a manner which will:

1. Fully protect the health and safety of the general public and any occupants of the structure. At a minimum, all new structures shall be designed, located, and constructed so that:

   a. The structure will survive inundation by waters of the base flood elevation without any lateral movement or damage to either the structure itself, or to any of its equipment or contents below the Base Flood Elevation (BFE).

   b. The lowest floor (including basement) will be elevated to at least two (2) feet above the Base Flood Elevation (BFE).

   c. The occupants of the structure can remain inside for an indefinite period of time and be safely evacuated at any time during the base flood elevation.

2. Prevent any significant possibility of pollution, increased flood levels or flows, or debris endangering life and property.

C. All hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently accepted technical concepts. Studies, analyses, computations, etc. shall be submitted in sufficient detail to allow a thorough technical review by the Township and the Department of Community and Economic Development (DCED).

SECTION 600.12. Administration.

600.12.1. Designation of the Floodplain Administrator.

The Zoning Officer is hereby appointed to administer and enforce this ordinance and is referred to herein as the Floodplain Administrator.

G. The Floodplain Administrator shall maintain all records associated with the requirements of this ordinance including, but not limited to, permitting, inspection and enforcement.

H. The Floodplain Administrator shall consider the requirements of the Pennsylvania Code, 34 Pa. Code Chapters 401-405, as amended from time to time, and the Pennsylvania Uniform Construction Code, 35 P.S. §§7210.101 - 7210.1103, as amended from time to time, including but not limited to the most recent versions of the International Building Code and International Residential Code, as adopted or hereinafter amended by the Township of Abington.

600.13.2. Application Procedures and Requirements

A. Application for such a Permit shall be made, in writing, to the Floodplain Administrator on forms supplied by Abington Township. Such application shall contain the following:

1. Name and address of applicant.

2. Name and address of owner of land on which proposed construction is to occur.

3. Name and address of contractor.

4. Site location including address.

5. Listing of other permits or variances required.

6. Brief description of proposed work and estimated cost, including a breakout of flood-related cost and the market value of the building before the flood damage occurred where appropriate.

B. If any proposed construction or development is located entirely or partially within any Floodplain Conservation District, applicants for Permits shall provide all the necessary information in sufficient detail and clarity to enable the Floodplain Administrator to determine that:

1. All such proposals are consistent with the need to minimize flood damage and conform with the requirements of this and all other applicable codes and ordinances.

2. All utilities and facilities, such as sewer, gas, electrical and water systems are located and constructed to minimize or eliminate flood damage.

3. Adequate drainage is provided so as to reduce exposure to flood hazards.

c. Supplemental information as may be necessary under 34 PA Code, the 2006 IBC or the 2006 IRC.

4. The following data and documentation:

a. If available, information concerning flood depths, pressures, velocities, impact and uplift forces and other factors associated with a base flood elevation; and detailed information concerning any proposed floodproofing measures and corresponding elevations.

b. Documentation, certified by a registered professional engineer or architect, to show that the cumulative effect of any proposed development within an AE Area/District without floodway when combined with all other existing and anticipated development, will not increase the base flood elevation more than one foot (1') at any point.

c. A document, certified by a registered professional engineer or architect, which states that the proposed construction or development has been adequately designed to withstand the pressures, velocities, impact and uplift forces associated with the base flood. Such statement shall include a description of the type and extent of flood proofing measures which have been incorporated into the design of the structure and/or the development.

d. Detailed information needed to determine compliance with 600.11.4(F), and 600.11.3(A) hereof, including:

1) The amount, location and purpose of any materials or substances referred to in 600.11.3(A) and 600.11.4(F) which are intended to be used, produced, stored or otherwise maintained on site.

2) A description of the safeguards incorporated into the design of the proposed structure to prevent leaks or spills of the dangerous materials or substances listed in 600.11.3(A).

e. The appropriate component of the Department of Environmental Protection's "Planning Module for Land Development."

f. Where any excavation or grading is proposed, a plan meeting the requirements of the Department of Environmental Protection, to implement and maintain erosion and sedimentation control.

5. Applications for Permits shall be accompanied by a fee, payable to the Township based upon the estimated cost of the proposed construction as determined by the Floodplain Administration.

600.13.8. Enforcement.

A. Notices. Whenever the Floodplain Administrator or other authorized municipal representative determines that there are reasonable grounds to believe that there has been a violation of any provisions of this Ordinance, or of any regulations adopted pursuant thereto, the Floodplain Administrator shall give notice of such alleged violation as hereinafter provided. Such notice shall:

1. Be in writing;

2. Include a statement of the reasons for its issuance;

3. Allow a reasonable time not to exceed a period of thirty (30) days for the performance of any act it requires;

4. Be served upon the property owner or his agent as the case may require; provided, however, that such notice or order shall be deemed to have been properly served upon such owner or agent when a copy thereof has been served with such notice by any other method authorized or required by the laws of this State;

5. Contain an outline of remedial action which, if taken, will effect compliance with the provisions of this Ordinance.

C. Penalties. See the current Building Code of the State of Pennsylvania.

600.13.0. Appeals.

A. Any person aggrieved by any action or decision of the Floodplain Administrator concerning the administration of the provisions of this Ordinance, may appeal to the Zoning Hearing Board. Such appeal must be filed, in writing, within 30 days after the decision, determination or action of the Floodplain Administrator.

B. Upon receipt of such appeal the Zoning Hearing Board shall set a time and place, within not less than ten (10) or not more than 30 days, for the purpose of considering the appeal. Notice of the time and place at which the appeal will be considered shall be given to all parties.

C. Any person aggrieved by any decision of the Zoning Hearing Board may seek relief there from by appeal to court, as provided by the laws of this State including the Pennsylvania Floodplain Management Act.